CONFLICTING PRINCIPLES IN TEACHING

CHARLES A. McMURRY

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CONFLICTING PRINCIPLES IN TEACHING

AND

HOW TO ADJUST THEM

BY

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The Riverside Press
CAMBRIDGE . MASSACHUSETTS
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TO

SUPERINTENDENT WILLIAM H. HATCH

Of Oak Park, Illinois

My long-time friend and patron in educational work

I dedicate this book

As an expression of lasting friendship

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An inevitable dualism bisects nature, so that each thing is a half and suggests another thing to make it whole; as spirit, matter, etc. . . . The same dualism underlies the nature and condition of man.

EMERSON.

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CONFLICTING PRINCIPLES IN TEACHING

PART I

OPPOSING PRINCIPLES OR DUALISMS IN SCHOOL DISCIPLINE AND INSTRUCTION

CONFLICTING PRINCIPLES IN TEACHING

CHAPTER I

THE REALM OF CONTROVERSY

JEAN PAUL RICHTER, speaking in his *Levana* of the contradictions in family and home education, says: —

If the secret variances of a large class of ordinary fathers were brought to light and laid down as a plan of studies, and an outline of moral education, they would run somewhat after this fashion: In the first hour pure morality must be read to the child, either by myself or the tutor; in the second, mixed morality, or that which may be applied to one's advantage; in the third, "Do you not see that your father does so and so?" in the fourth, "You are little and this is only fit for grown people"; in the fifth, "The chief matter is that you should succeed in the world and become something in the State"; in the sixth, "Not the temporary but the eternal determines the worth of man"; in the seventh, "Therefore rather suffer injustice and be kind"; in the eighth, "But defend yourself bravely if any one attack you"; in the ninth, "Do not make such a noise, dear child"; in the tenth, "A boy must not sit so quiet"; in the eleventh, "You must obey your parents better"; in the twelfth, "And educate yourself."

So by the hourly change of his principles, the father conceals their untenableness and one-sidedness. As for his wife, she is neither like him nor like that harlequin who came on to the stage with a bundle of papers under each arm, and answered to the inquiry what he had under his right arm, "orders," and to what he had under his left, "counter-orders." But the mother might better be compared to a giant Briareus who had a hundred arms and a bundle of papers under each.

Our practical education bristles with contradiction. Even a superficial survey of prevailing practice and principles in education shows them often running at cross-purposes. Learning to read in the first grade illustrates this. Some trained primary teachers demand a systematic formal drill in the phonetic elements combined with the forms of letters. Beginners are trained into the habit of quickly interpreting new word-forms by combining the elementary sounds. Other experienced and zealous primary teachers practice a sentence-and-thought method which makes the mastery of phonic elements and forms entirely secondary and incidental. A strong effort is made by such persons to avoid systematic formal drills. Primary readers and charts are worked out in accordance with each of these strongly contrasted methods of learning to read. In arithmetic, also, the spiral plan of arranging topics provides for a brief, incomplete treatment of a topic such as the table of long measure, and a frequent return to this topic at stated intervals after other intervening topics have had a similar short presentation. Such is the plan of the Werner arithmetics. Other arithmetics provide for a complete and adequate treatment of a topic at one time, in one series of continuous lessons, till it is mastered, that is, till the process is fully understood and variously applied. The two methods are in pronounced opposition.

The source method of handling history topics in some cases dispenses with a textbook and seeks to construct history out of interesting original documents. The

more usual plan is a close adherence to an assigned lesson in a book, with no use of outside references. These are staring contrasts in method. Some teachers and county superintendents require children to learn and locate all the counties in a State like Illinois or Pennsylvania. Other teachers and courses dispense entirely with this kind of local geographical information and deal with what they call more important facts and topics. Such contradictory practices and theories prevail all through our educational system and leave young teachers in a quandary.

More reflective study of these difficulties reveals deeper-lying oppositions which are so fundamental as to constitute the knotty problems for thinkers and experts in education. Even the basis of moral education is in dispute, namely, whether it is secured through moral instruction and precept or through the direct guidance of behavior. People differ greatly as to the main purpose of the common school: with some it is mental discipline; with others useful and practical information; with still others it is breadth of social interest, and adjustment to life conditions, — citizenship in a broad and liberal sense. Vocational training and guidance are now coming into prominence, and relative to it there is wide diversity of plans and of controlling ideas. The old doctrine of formal mental discipline is still cherished by conservative teachers, while the opposing doctrine of interest and pleasure in the normal activities of study is strongly supported by many. The relative place and importance of inductive

and deductive processes of thought, as applied to classroom work, are still in dispute. That old question — how to develop strong will-power — is still a matter of wide diversity of opinion. The elective system has its friends and enemies. In the opinion of enthusiastic advocates, the manual arts are to exert a reorganizing influence upon our elementary school course. Others believe that the manual arts must hold quite a subordinate place among the valuable studies of the common school. In our educational meetings all these and many other topics have been the source of continued disagreement and controversy.

Again, writers on education, like John Locke, Rousseau, Montaigne, Spencer, Herbart, Huxley, Harris, Rein, William James, and Froebel, differ even to contradiction in their statement of fundamental doctrines. Most psychologists place emphasis upon the formation of right habits. Rousseau says that his Émile shall form no habits except the habit of not forming habits. Herbart requires, as a fundamental basis for the right kind of work, that school studies shall be essentially interesting, and affirms that studies which fail to awaken any permanent interest have but small value. William James, while admitting the value of interest, says, "It is certain that most school work, till it has become habitual and automatic, is repulsive." Such contrary views are not uncommon among all classes of writers upon educational topics.

This diversity or contrariety of opinions among theorists and practical educators leads many people

easily to the conclusion that there are few settled standards in education, no real pedagogical science, and that our well-meant efforts to train teachers are not founded on broad basal principles, but are of the nature of devices and accommodations to practical needs. Whatever fundamental principles we may have are at least obscured and covered up by these controversies. The opponents and critics of a science of education discover in such disagreements and conflicts of opinion a direct support for their hostile criticisms. Now, if we can clear the field of all unnecessary controversies, we may be able to rescue our main educational doctrines from discredit and thus secure a more generally acknowledged basis for educational science.

Such wide variety of opinions and lack of agreement on fundamental issues are not only discouraging, but, to some extent, demoralizing, to the rank and file of teachers. Even principals and superintendents are disconcerted by these opposing claims which throw a hesitating uncertainty into a teacher's actions. In recent times this confusion of tongues has been increased by new elements of discord. The present unusually conflicting and chaotic state of our course of study and of our school doctrine and practice is due to rapid and radical changes, to numerous importations of new materials and new ideas, which have been rapidly accumulated, but are not yet organized into a consistent plan. Our aims and our theories are now undergoing the process of reconstruction and reformation: practice, in trying to keep up with these swift

changes, takes on a variety of inconsistent forms. There has been a recasting of old methods and an evolution of the new.

At lucid intervals in this long-drawn-out and widespread conflict, we may well seek a few moments for reflection and try to take stock of our situation and of our achievements. It is not difficult to discover that disagreement, conflict, and more or less confusion prevail in courses of study, in classroom practice, and in administrative policy. Much of this discord is inevitable as a sort of clearing-house for adjusting claims and for sifting out essentials.

From all this educational discussion and controversy we may expect, as time ripens, permanent and valuable results — sounder theories and better practice. Much of what appears radical contradiction in ideas and usages may prove in the end to be good doctrine carried to unwarranted extremes. Debate naturally leads to extreme statements. But debate or partisan controversy is a slow and exasperating method of reaching important results. It is quite possible that a more deliberate, many-sided, judicial attitude of mind toward our large educational problems would at once obliterate half our antagonisms and thus give us a much better chance to get at the main issues. Even in these larger and more fundamental problems deliberate and carefully balanced judgments may harmonize differences and bring about agreement and unity of effort. From a broader, more inclusive point of view, these apparently conflicting principles, when properly

interpreted and adjusted to each other, are found to be the complementary segments of a larger whole.

In education, as in other fields of human experience, fundamental issues are often double-faced, like the god Janus, looking in opposite directions. Our Federal Government, for example, with its balance of powers, is such a paradox, one out of many. It involves two poles of thought. The knotty problem for the thinker is the one that springs from two seemingly opposing principles which must somehow be brought into unison. It is this double-sided, paradoxical quality which makes the difficulty in the problem, without which it would not be a problem. The solution of such a problem calls for a larger liberality of mind which can discover a mutuality in seeming opposites. When two such warring principles maintain themselves strongly in educational discussion for a long period of time, the suspicion is justified that there may be some more comprehensive view which will dissolve the antagonism and thus bring into light a larger segment of truth. From this point of view seeming antagonisms between educational doctrines are by no means objectionable or discouraging. They rather point out the centers of progressive effort, the very spots where energy can be expended to the best advantage in the search for a larger truth, a truth which will combine the opposites.

As a result of past educational theorizing and practice, we have a collection of important principles which are more or less scattered, isolated, and contradictory. A higher organization and unification of these princi-

ples is demanded which will quench useless antagonisms and concentrate effort at the points of efficiency.

Our purpose in this book is to point out the lines of reconciliation by which many of the now opposing forces can be brought into coöperation, the controversies set aside, and, perhaps, the knotty problems solved.

A few points of controversy

1. Should children be required to memorize important proverbs and statements of truth which they do not clearly understand?
2. Is a marking system based on percentages a good arrangement for schools?
3. Is it advisable to have the more capable children in a class by themselves, and the slower ones of about equal ability by themselves?
4. Should prizes be given for excellence in school work?
5. Should instruction in intermediate grades be chiefly oral, or should textbooks be mainly used?
6. Should rules in arithmetic be thoroughly memorized? Also definitions in grammar?
7. In manual training should all the children in a class make the same thing, of the same size, materials, dimensions, joints, etc.? Or, should each child make what he likes according to his own design?
8. Should children's mistakes in English be corrected while they are reciting?
9. Which is the better mode of instruction, private tutoring or teaching children in classes?

10. May children be held to a strict use of a phonic method in primary reading?
11. Can we train the memory?
12. Is the use of a spelling-book advisable?
13. In language study is it better to learn a modern language, or an ancient language, first?
14. Should games and construction exercises be used as a part of the regular school time?
15. Should the "Three R's" receive the chief emphasis in school, or are other studies of equal or more importance?
16. Is the grammar school the place to begin vocational training?
17. Is it well to introduce self-government into schools?
18. Is it advisable to allow corporal punishment in schools?

CHAPTER II

SCHOOL MANAGEMENT — ITS NATURAL DUALISMS

The management of children in a school is a double problem of individual and of social control, which involves necessary contradictions. One must bring into coöperation several groups of forces which only too easily are thrown into opposition. Where such conflicts naturally arise, it is prudent to inquire into the sources of contradiction and the means of hindrance. One method of analyzing this complex problem is to pair off the contradictory elements and to search out in each case a broader principle of reconciliation and harmony.

I. The first pair of opposites may be stated in the form of a question, — Can children be trained, at one and the same time, into two such opposite virtues as prompt obedience to authority and free, self-controlled, independent action? On the one hand, the school is under obligation to train children into the spirit and practice of obedience. The conduct of children must be regulated by law; for without it the school falls to pieces. Society itself, without this cohesive principle of obedience to authority, could not hold together. The school, by generating respect for authority and by basing upon this the habit of obedience to law, fulfills one of its chief obligations to society. In organizing and administering the affairs of the school the

principle of obedience to authority is, therefore, fundamental.

But, on the other hand, children in school, as elsewhere, require freedom. They are not slaves and are not to be trained into a slavish and cowering spirit. They have a birthright of freedom and independence, not to be curtailed, but encouraged and enlarged. In this respect the purpose of the school is not to suppress children, nor to subjugate them to arbitrary will, but rather to develop them into the spirit and habit of freedom. It must become, of course, a regulated freedom, based upon respect for law. And herein is found the principle of adjustment by which these seeming opposites are combined.

In a special class made up of truant and troublesome boys from 12 to 15 years of age, drawn from several schools, we have been making the experiment of combining shop-work and school-work in nearly equal proportions, with the definite purpose of developing in them better habits of control in work and study. We are trying always to give them more freedom of action and at the same time to develop in them a cheerful obedience to school regulations. The chief inducement we can offer them is shop-work in printing, book-binding, and wood-construction and other activities, which they like, which give them greater freedom of choice and action, and such a practical treatment of school studies as appeals to their needs and interests (vocational, etc.). Their habits of truancy and their lack of respect for orderliness and law are against our plans.

But we are using every inducement that legitimate opportunity for free action can give to draw them under the sway of law and order. The abnormal home conditions and lawless habits already formed increase the difficulty of combining freedom and law. But the necessity for this combination is also more clear and imperative. The George Junior Republic in New York is a still more extreme illustration of a serious effort to bring lawless city boys under control by allowing them freedom for self-government in managing their affairs.

Gradually, through the enlightening and directing influences of discipline and instruction, boys and girls are to develop toward larger self-control and freedom.

By obedience to a well-administered, humane authority, they grow into intelligent regard for the regulations of school and of society. In the case of adolescents a stormy period often intervenes before these opposing principles get settled and adjusted to each other. At the close of their school years, if properly handled by parents and teachers, children should have acquired a respectful conformity to the regulations of home, of school, and of society. They should possess also an acquired skill in directing their own conduct independently, within the proper limits of law. This steady development into enlarged freedom of action under proper control takes place in every well-conducted family and in every well-managed school. Such a combination of obedience and freedom will serve the best purposes both of the individual and of society.

How is the teacher to bring about this result? The theoretical statement of the difficulty and of the result to be achieved is easy. But the practical adjustment of the threatened discord is often a fine point of skill in management, requiring watchfulness, judgment, and patience. Obedience to authority and freedom to do as one pleases are often regarded by young people as strictly antagonistic. As children enter school in the first grade, the transition from the freedom of play to the orderly procedure of the school brings to light at once this conflict of forces. By its principle of order the school stands out in marked contrast to the spontaneous and unregulated activities that precede. Experienced primary teachers report to me that they do not at once lay down fixed rules of action for the beginners. The previous free, unconstrained movements of the children and their lack of voluntary control make it prudent for the teacher to have few if any rules, to issue direct commands sparingly. Under the guidance of a kind and steady hand the little ones begin to observe and even to feel the need of social order and of prompt conformity. But at best the change is a gradual one and requires tactful concession to a child's nature and stage of growth. In some children the lack of muscular control interferes at first with orderly movements about the room and in games. In other cases they have acquired at home whimsical or disobedient habits that must be supplanted by better ways and by a better spirit. This beginning of social control and this curbing of spontaneity without losing the

sense of freedom is a beautiful illustration of artistic skill in teaching.

In intermediate grades, again, when the spirit of boyish independence breaks out, parents and teachers make an effort to keep the noise and bluster of the youngsters within limits. They maintain the spirit of order and control against carelessness and freakishness, and also against willfulness and bad temper. But the freedom of the realm, as Whittier describes it in *The Barefoot Boy*, is a native birthright of the boy to be fully respected and provided for. A hearty and joyous temperament is a great aid in working out this problem of control with boys. Teachers themselves should be boyish in their interests and enthusiasm.

With the onset of adolescence in the grammar grades and in the high school a danger point is reached where authority and freedom seem, for a time, to part company. The spirit of independence blazes up with phenomenal energy, while teachers and parents, taken, perhaps, by surprise, feel impelled to a powerful reaction from the side of authority. After all, it is necessary to some extent, as Arnold Winkelried said, to "make way for liberty." Wise parents and teachers find it prudent to allow the youth at this period considerable freedom. The outcome depends partly upon the strength of affections and habits already formed, and partly upon the sympathy and wisdom of parents and teachers in maintaining a just balance between authority and freedom. It is a storm-and-stress period full of cares and anxieties for those who feel responsible for its

results. The spirit of freedom, and the spirit of obedience are not natural and easy yokefellows. It is a gradual process of adjustment by which they are brought into coöperation. Through experience and training, and the formation of habit, they learn to pull together.

It is this ever-present possibility of conflict and maladjustment which makes all government, whether in the State, the home, or the school, a ticklish experiment. It is a genuine problem which every teacher must face the moment he steps into a schoolroom. Nor can the child himself avoid this struggle which should result in self-mastery. When John, in a fit of passion or of sulkiness, refuses openly to obey a reasonable order, the teacher must step in, sometimes with a strong hand, and enforce obedience. Such drastic action, however, should be exceptional, and used only as a final resort when other precautionary measures fail. The care and forethought of the teacher, in using milder measures of suggestion and of kindly advice, should in most cases prevent such a collision.

In their school and playtime activities some children require encouragement to greater freedom of action; others need constraint. In a fourth-grade geography class, Katherine is reserved and taciturn, and never offers to recite or to ask a question. Mary, on the contrary, has a premature answer always ready, speaks out and interrupts others: she likes to talk. The problem is, how to encourage Katherine to more freedom of expression and to teach Mary self-control and

reserve. Each child is in need of a sympathetic friend to help her out of her unfortunate habit. Such a habit based upon temperament is only slowly overcome. It requires kindness, firmness, and patience in the instructor. On the playground, Charles holds aloof as a mere passive onlooker. Peter rushes in eager to manage and control the game. The former should somehow catch the social spirit and learn to coöperate freely with his fellows, while Peter should feel a touch of modesty and have more regard for the person and rights of others. The playground and the outdoor excursion are now recognized as the best places for discovering and cultivating these personal qualities, for checking some and encouraging others.

The child is impulsive and unregulated. He is one-sided and extreme in his judgments. He is not a philosopher to discover the larger unity that combines opposing principles. The burden of compromise and adjustment lies upon the teacher with his larger experience and more balanced judgment. He will survey wisely this complex situation with its natural conflicts. He will take the initiative and, by direct and indirect means, guide the child's actions through the ways of obedience into freedom. We know that it can be done and is done every day by skillful teachers. Yet it is not easy to formulate the process nor to furnish illustrations that will exactly fit special cases that may arise.

The adjustment between opposing ideas is close and delicate. The teacher's own temperament and disposition will combine and embody these opposing mental

attitudes. The teacher who has learned to subordinate his own pleasure and freedom of action to just requirements has already gained valuable experience in combining these discrepant elements of behavior. He has already developed into a larger freedom through self-control and obedience to law. He has often experienced the conflict of egoistic feelings with unselfish impulses and motives. For this reason he can better appreciate the struggle that is going on in the child's mind, and guide his impulsive movements toward rational self-control. Children are in the period of growth and change, of storm and stress, when the more complex and balanced habits of conduct have not yet been formed. Education, in this fundamental moral sense, is the process by which these conflicting elements in the child's unformed character are gradually adjusted and welded together into habits under the guidance of a wiser, more experienced person. The more complex habits are thus formed out of which the larger framework of character grows.

Other important agencies in society are at work upon this same problem. In the family, the parents must daily practice with their children this fine art of reconciliation between authority and freedom. The failure of many homes to reach this standard in training their children is the cause of endless misery and misfortune. If political governments could put into effective practice this art of training citizens to freedom under law, perhaps conflicts, violence, civil brawls, and even war could be largely escaped. In countries

like Mexico, where revolutions are the order of the day, government vibrates between the extremes of abitrary power and wild, reckless freedom. They run to lawlessness, or they submit for a time to a powerful dictator. They have not yet formed the complex habit of exercising freedom under law. Children are somewhat like the half-civilized races which have not yet developed to the point of combining freedom with law. In a good many families this problem has already been partly solved, and children coming from such homes submit without conflict to all sensible school regulations. Many children, less fortunate in their home surroundings, must learn this important lesson in the school.

II. Another phase of this same problem is found in a second form of contradiction. Decisiveness, or firmness, in dealing with children stands in contrast with gentleness. The teacher is called upon to be consistently firm and decisive in thought and action. He should not shift nor shuffle. He should find the right ground and stand upon it, come what may. Nothing short of this will command respect and secure authority. Teachers often neglect or forget their own rules, thus training children to do the same. It is better to make very few rules, perhaps only one important rule at a time; then follow this up steadily and persistently till the children are convinced that the master's action is steady and sure. Every such important ruling should be made only after deliberation and forethought; as far as possible with sound judgment as to

ultimate consequences. In this way most serious mistakes are avoided. Firmness and consistency should follow in the track of this decision and form the basis of a teacher's good repute.

But decisiveness, if it stands alone, is often too abrupt and arbitrary. It gives needless offense by seeming to be hasty and inconsiderate. Important matters require to be handled with some deliberation, with proper show of courtesy to other opinions. At this point another quite opposite quality is imperatively needed, namely, gentleness. A gentle manner, a kindly spirit, a genuine good will toward children are quite as important as firmness. Gentleness is, indeed, a trait of human nature of some potency. It reconciles us to an unpleasant but necessary decision. It pours oil on the troubled waters and they subside.

Unfortunately in some cases, gentleness glides over too easily into complaisance and indulgence. It needs something behind it to give it strength and so we come back to firmness or decision, which is the complement of gentleness. The teacher should combine the two, or at least carry them along together as closely as possible without running to an extreme in either way. Robert is very anxious to join the boys in a game of ball. But he has been told for good reasons that he should first complete his lesson. A storm of feeling arises which ought to be handled with combined firmness and gentleness. Even where severe penalties must be applied, gentleness should offset their rigor. Here we have a contradiction in terms which explains the

seriousness of the difficulty and the necessity for carefulness in adjusting and combining opposites.

Some teachers are by nature decisive; others are naturally gentle. Because of a predominant temper toward one side or the other, most persons must put themselves under discipline to acquire the art of balancing virtues, of combining two such opposites in suitable proportion and harmony. No teacher can afford to be decisive who is not at the same time gentle. Somehow we should find a way to smooth out this conflict, to obliterate this contradiction by a higher form of harmony. Again, there is a tendency to swing from one extreme to the other. Decisiveness first runs over into abruptness, harshness, and stubbornness; then, when the reaction comes, gentleness overflows into excess kindness and indulgence. This tendency to extremes gives a dangerous unstability to one's management of children.

Under normal conditions, the proper reaction of a child's behavior to the influence of teachers depends upon how well these seemingly contradictory elements are combined and put in action. Stubbornness in the teacher begets stubbornness in the pupil, or else a forced submission and a lasting resentment. On the other hand, too much of gentleness or concession begets waywardness and self-indulgence. A just and well-balanced treatment which combines firmness and gentleness commands respect and is certain to win out with the majority of children. Pestalozzi discovered and expressly stated that in his school at Stanz he

could occasionally punish children severely without losing their affection, because his constant and painstaking labor in their behalf was such a convincing proof of his good will toward them.

The usual treatment of children in many homes is so vacillating and inconsistent that the school has a notable opportunity to improve upon it and to win the lasting gratitude of children by a stronger and kindlier treatment. Good government in this sense requires not so much main strength and autocratic will in teachers as a well-balanced mind and the steady spirit of fair dealing. Any one who will take time to be fair-minded, deliberate, kindly, and self-controlled, and will bear himself firmly and consistently toward children, should soon learn the art of governing a school. The main purpose of government is to secure justice and equal opportunity for all. The principle of mere authority has been often overstrained in school and State. The ruler should possess a judicially balanced mind which is free from haste, passion, prejudice, and willfulness. Only thus can he keep in smooth adjustment and combination such opposite traits of character as decision and gentleness.

III. Reserve and spontaneity in our intercourse with children suggest another double-sidedness in our attitude toward them. Something of proper reserve and dignity toward young people is appropriate. A natural, quiet superiority and not too close familiarity befit the teacher. This kind of dignity puts children into a respectful attitude. It is simple and natu-

ral, not priggish or affected. It is not offish and unfriendly.

On the other side, spontaneity and even impulsiveness are pleasing qualities. A frank and hearty person, who enjoys young people and throws himself freely into their life and interests, easily becomes their friend and guide. Lifelong memories of heartiness and good will result from such leadership. This impulsiveness may sometimes show a drift toward effusiveness and sentiment, but in general it is a wholesome element of character. Dignity and reserve on one side — freedom and spontaneity of behavior on the other: — what is wanted is a teacher who can combine these opposite qualities into harmony and reciprocal reaction.

It is of importance to consider how far people who are too impulsive, on the one side, or too reserved and unsocial, on the other, may consciously improve their disposition by thoughtful self-discipline. They might thus strengthen the weaker part and modify the stronger impulse so as to bring these contrasted qualities of human nature into union. Normal schools and other instrumentalities for training teachers should devote themselves in part to this social training. A young woman of social spirit teaching in a village was reproved by her superintendent because she participated freely in the games of the young people in an evening entertainment. "Why," he said, "your conduct was such that no one would have known that you were a teacher." Being somewhat troubled by this criticism, she mentioned the matter to the president

of the school board, who was a man of discretion. His reply was, "Your superintendent could not have paid you a higher compliment." Conduct is a fine art and cannot be controlled by fixed rules. Individuality must have scope to assert itself and no two persons can be held to the same conduct. But the ideal of attainment for all teachers is a happy combination of these contrasted but equally important qualities.

IV. Criticism and encouragement of children form another pair of opposites which, in proper combination, work for efficiency. How to find the combination is the serious problem. A good teacher is critical of children's faults and errors. He is perpetually on the alert to turn children from faulty ways and habits into right ones, from error into truth, from inattention and carelessness to concentration and effort. His business is to get after the delinquents and cause them to keep step. The prevailing laziness, thoughtlessness, and inefficiency of children at their tasks make this phase of his duty clearly imperative. But alas! proper criticism easily shifts over into sharpness and scolding, and, what is worse, banter, sarcasm, and innuendo. The chronic scold, the carping critic, appear in the teacher's desk, and we have a contribution of wormwood to school discipline and instruction. In time this spirit becomes galling, and, in extreme cases, intolerable.

On the other hand, wise teachers encourage children in spite of their mistakes. They are charitable toward errors. They overlook many minor and even serious

faults. They are fishing for still larger game, in spite of dogfish and other "varmints" that get into the net. Many children are bashful and timid and require encouragement. Even bad boys should find out that they have some good qualities and that the teacher has faith in them.

Who is a match for these things? To be critical and constantly on the alert for error and carelessness and sham; to be at the same time encouraging, stimulating, and charitable? Praising children too much tends to flattery and untruth; while criticism easily degenerates into nagging. Somehow the teacher must square up the account and get a just equipoise between fair criticism and needed encouragement. He must show himself a fault-finder and a friend in one breath. One teacher of my acquaintance was popularly known as "the scold," and some less complimentary epithets were applied, because he developed and exercised his scolding temper. He was, in important ways, a remarkable teacher, and commanded respect. One good result that may have come from his propensity to scold was a strong feeling of its disagreeableness, which may have served his pupils as a warning against such a fault. A teacher who has good health and a hopeful, jubilant spirit in his work, so that he can be critical and severe at times and yet arouse his pupils to their best cheerful effort, has a priceless qualification. It is one of those higher qualifications which examinations are impotent to test.

In our business we should cultivate those qualities of

mind and temper which are *likable* and equally those which command deference and respect. Keen, cutting and unfair criticism by a strong teacher is one of the mean traits in human nature. A timid, sensitive student, in his weakness, has no resource against such a strong, dominant teacher. It is the spirit of the bully, who enjoys tyrannizing over the weak. Such a temper in the teacher deserves the keenest excoriation, the most unqualified reprobation. Let the teacher avoid extremes. Let the sharp sting of necessary criticism be closely followed by a hearty encouragement to renewed effort. Every true teacher is a mental surgeon who can use the knife with safety and has withal a kind heart.

V. In the effort to combine these strong and more or less conflicting forces and to bring them to bear upon children through his own person, the teacher often meets with a natural but unexpected conflict. On the one side is the strong, aggressive character of the teacher, on the other, the natural reaction of the children. Because of the wide diversity of character and disposition in children and in teachers, this reaction may be responsive or antagonistic. When such antagonisms arise out of the contact of a strong teacher with his pupils, very serious and unfortunate consequences may follow. How are these to be met? It is certainly necessary to bring to bear upon boys and girls the whole energy and personal force of this well-equipped master, whom we may now venture to call "the strong teacher." His interesting and wholesome qualities, reinforced by a strong will-power, make a deep impres-

sion upon children. They appreciate the influence of such a person, and often submit freely to his guidance. As time goes on, they appropriate the master's sentiments and modes of thinking and acting. This is what has been long prized as the molding influence of a strong, energetic personality upon the immature and receptive character of young people. This ideal of a vigorous character which carries influence and produces efficiency has long been a favorite one with those who look for what may be called "heroic qualities" in the teacher. Such a man could lead high-spirited youth anywhere, upon the battle-field, or upon a forlorn hope. Such a one is strong willed and clear headed. He has high standards and definite notions of the means to be used for realizing them. He feels the full responsibility of his work and has a generous enthusiasm for its aims. Thomas Arnold was such a leader. Horace Mann was another. Mary Lyon among women, Garfield as a schoolmaster, Stonewall Jackson, and many others were of this heroic mold. The world admires this sort of person in any calling. In the educational field such characters are preëminently desirable.

And yet this so-called strong schoolmaster does not fill the full measure of the all-round teacher. He may be accounted but half of a much larger whole which comprises the teacher's complete equipment and make-up. And the other half is more or less in distinct contrast if not opposition to this.

Just at this point, in the contact between teacher

and child, arises a dualism of opposing forces more radical and comprehensive than any we have yet mentioned. Before admitting the right of the educator to shape the character of young people according to his own notion, or according to the pattern of his own individuality, we must ask — Does the teacher fully appreciate these young people in the wide, rich variety of their disposition, character, and ability? Does he understand their nature well enough to tell just how it ought to be shaped? Has he at his disposal the variety and quality of influences suitable for this shaping process? Has he taken the measure of each child's strength and weakness? — his special bent and peculiarity? Does he really understand the nature of the clay he is trying to mold? These questions are entirely fair. They cover at least one half of the whole problem.

At this point the teacher must face about and subject himself to a new and very different set of tests. What he needs is more penetration and sympathy, ability to see and feel things from the boy's or girl's standpoint, — yes, from that of twenty or thirty different boys and girls of the most varied and nondescript personality. Many-sidedness in his ability to interpret and sympathize with varieties and peculiarities and unexpected qualities in children is first needed. Not how much can he impress himself upon others, but, first of all, how well does he appreciate and understand others; how clearly does he comprehend the conditions of human nature in children in harmony with which he must operate?

From this point of view, the genuine teacher is, first of all, a receiver of influences, not a giver; extremely sensitive and susceptible of impressions from others, and shrewd in his power of correct interpretation. He is the last person in the world to imagine that he is a law unto himself, that his own nature is adequate to all emergencies. It should be remembered that the problem lies in the child quite as much as in the teacher. If he is alert to take in the new situation, he will soon discover, in any school, certain pupils having a higher order of natural ability in certain directions than the teacher himself. This suggests the need for enlarging his own personality far enough to take in and to appreciate the rich treasure of life with which he is entrusted. At any rate, he should make a liberal allowance for his own deficiencies and recognize a fine assortment of perhaps unsuspected superior abilities in the children. Without this sympathetic preparation for his task, no matter how great his strength and power, he may prove a mere uncouth blunderer; he may ride rough-shod over tender sensibilities, and do more damage than he will ever know how to mend.

Here is a striking polarity in the two fundamentals of good schoolmastering. Two opposite and not very congenial virtues must be brought into terms of close companionship in one and the same teacher. Outgoing, dominant energy of will — many-sided, sympathetic receptivity. One must be like tempered steel for strength, and like wax to receive impressions. One cannot easily overstate the difficulty of making the right

combination of these opposed qualities: it is setting up a high standard for human nature to attain. But in the management and training of children both these virtues and their close coöperation are necessary. It will test the best master's wisdom in full measure to find the right solution to this problem.

One practical difficulty lies in the fact that we easily misjudge children's conduct, attributing wrong motives to their action. One little fellow of about seven years had a difficulty with his teacher, an excellent and kindly woman. When she essayed to deal with him, he escaped and ran under the schoolhouse. The more sharply she summoned him to come out, the farther back he crawled. She failed in her purpose and reported to his father that the boy was extremely stubborn. The father naturally inquired more sympathetically into the situation and discovered that the little fellow was excessively frightened. Teachers are by no means infallible judges of the motives and actions of children.

A somewhat timid young woman of studious habit and quick, active intelligence entered a normal school. On account of some misunderstanding, one of her strong teachers gave her a sharp rebuke and so intimidated and discouraged her that she found it difficult to recite in his classes. Irritation at his critical, brusque treatment increased till she retired from the school. The teacher, himself, perhaps never knew what distress and misfortune his unsympathetic treatment had brought to a capable and earnest young woman. Such tragedies

can be avoided by strong, vigorous teachers only by sympathetic insight and carefulness in dealing with young people. Rigorous treatment should always be paired with unmistakable kindliness. When teacher and pupil in such a conflict have become somewhat estranged and embittered, it is very difficult for either party to judge the actions of the other without prejudice. An example of such a controversy between a strong teacher and an offended pupil came up in my own experience to-day. After two or three hours of careful meditation on my part, it was still doubtful if a reconciliation could be effected.

It is a weakness of human nature as exhibited in parents and teachers to neglect, somewhat, this sympathetic attitude toward children; to take it for granted, in cases of disagreement, that the children are at fault and the parent or teacher in the right. The instinctive reactions of grown-up people to the conduct of children are frequently bad. There are several reasons why grown-ups should think before they act or speak in dealing with children. For one thing, they do not understand nor sympathize with children's feelings and ways. They have outgrown and forgotten these things. Their minds are preoccupied with adult interests. Even parents often fail to get any true perspective of a child's interests and needs, and teachers are lacking even in what may be termed natural parental solicitude.

The almost universal tendency to apply adult standards of judgment to children's conduct and not to take

time or pains to get into touch with a child's needs and peculiarities is responsible for much unhappiness and failure in school and home. It is but a reasonable proposition that teachers first of all cultivate this friendly attitude, that they make a business of sensible child-study. A full half of one's teaching efficiency depends upon this willingness to forget self and to become a patient, tender-hearted learner of very simple things that one has forgotten, to become in spirit like a child. A frequent return to the life and work of Pestalozzi would teach us how completely his success depended upon this element of sympathy with children. Intellectual and moral training find no safe foundation unless this intelligent sympathy for children has been provided.

Further reflection suggests that a teacher's so-called strong point, his particular, favorite, monopolistic virtue, if unsupported by a counter-balancing virtue, becomes a vice. A strong teacher of mathematics, who sets up one severe standard for all children and remorselessly squeezes out of the class all who do not reach this high standard, is a dangerous tyrant in the schoolroom. It is a pity, what a strong, narrow-minded teacher can do to injure and warp some children, to disregard their real abilities and try to force some other line of strength. A strong will, which is narrow and stubborn, has a tendency to set other strong wills on edge and even to convert them into violent hostility. This may lead on to a mean antagonism and a permanent embitterment. The teacher should not give the

first offense, nor the second, in such a line of action. With his larger experience and more liberal knowledge, he should sympathetically avoid such a conflict, rather than foolishly precipitate it by his bigotry. The stronger the schoolmaster, if he is narrow and bigoted, the worse for at least some of his children. Unless the teacher takes himself severely in hand and broadens out his sympathies, he is apt to make sorry blunders in the effort to maintain and magnify what he imagines to be his special virtues. Unconsciously the narrow teacher develops a sort of dogmatic self-approval and presumption of superiority which is dangerously irritating to young people.

The first duty of the teacher is to expand and enlarge his own limited personality so as to take in and appreciate the rich variety of character with which the boys and girls surround him. It is his one chance to grow into the larger and richer life which his duties demand. If he can wake up to the situation and crawl out of his narrower self into a broader sympathy, he will soon discover, in any school, children who have higher forms of ability. This is his best chance to build out and fortify the weaker, neglected spots in his own character. The teacher is, of necessity, limited in his knowledge, but he should be sympathetically open to all phases and peculiarities of human nature. He is under obligation to encourage every child to a free and full development of the best points in his own character.

The schoolmaster does not aim at profound scholarship in any study. For this he teaches too many sub-

jects in too many grades, and is occupied with too many duties. If he has a specialty, it is not in one narrow study, but rather in the variety of his acquaintance with human nature and the skill he acquires in adjusting himself to these variations. The best schoolmaster for a village is the young man who has the widest range of proper interests and of influence among the young people. He is at home with boys who like shop-work and mechanics; he appreciates and encourages girls and boys who have musical talents and preference; he is awake to political discussions with those interested in politics; he enjoys literature and good novels with those who read much; with a boy devoted to a shotgun he can tramp on the hunt; he is enough of an athlete to be a hearty companion to boys on the ballfield; he can throw himself with zeal into scientific excursions and experiment; mathematical conundrums are his delight with boys who have a mathematical turn; history and biography are a favorite enthusiasm with him; he can get fun and competition out of even grammar and spelling; he takes a kindly interest in queer and peculiar or freakish children, and makes friends with those who are offish, or morose, or unpopular. His business requires all this and his temper should adjust itself to his business.

A certain young schoolmaster in Pennsylvania, John Meese, had this many-sided and active, participating attitude toward the young people in his village and neighborhood. So long as he remained there as a teacher, many young people grew up, prepared for

college and higher schools, and went forward into useful lives in various professions and business callings. When he left the neighborhood, the supply of young people who prepared for college and higher walks of life seemed to drop off and finally cease. A right-minded teacher in a neighborhood is a discoverer. He is on the lookout to find boys and girls who can do something and who, perhaps, do not know it. They need a teacher who can reveal to them their own best qualities and possibilities, and who can encourage and start them out on their various appropriate lines of effort. Handling children in large classes, with less chance to observe and appreciate individuals, has a tendency to blind one to this broader and richer phase of a teacher's duty.

VI. In school discipline another form of contradiction that taxes the resources of the teacher is the natural opposition between the individual and the social whole. The teacher's management must include the individual children, each with his more or less peculiar character and disposition, and at the same time the whole class or school as a unit. Sometimes the individual pupil is so disorderly and eccentric that it is impossible to bring him into proper relation to the school program. In such case either the boy or the school must be sacrificed, or at least they must be separated. Earl, a boy of fourteen, was bent upon disturbance. He broke through the rules at once, and caused confusion and interfered with other children by lawless tricks. There was but one thing to do, to put

him out of the room and refuse him the privileges of the school. It was possible in this case to isolate him and give him individual treatment. But he never re-entered the regular class-work. Every system of schools ought to be supplied with rooms and teachers who can deal with such special cases, and with smaller special groups. It is unjust to impose such a ruinous burden upon a room-teacher who has the charge of thirty or forty children. It upsets the order and efficiency of the room, worries the teacher to a frazzle, and does the boy himself no good.

Apart from such extreme cases the teacher has to deal not only with individual children, each of peculiar bent and quality, but also with certain groupings and organizations of school spirit in classes and otherwise, each of which may have a distinct social character. Sociology has made clear to us that, where people combine and pool their minds and feelings, there appears a new and special form of human spirit, differing in quality and scope from individual spirit. More recently our educational writers have emphasized the social side of training, with the idea that the child, first of all, must be brought into conformity to social standards so as to act in harmony with this powerful social spirit. Social adjustment has been set up as the chief aim of the school. The older definition of education emphasized, rather, the complete, all-round development of the individual. Each of these points of view, when emphasized, tends toward one-sidedness and antagonism against the other. But each view requires a full

recognition, and the final solution lies in a very broad view that comprehends both in a larger unity.

The schoolmaster should become an expert in detecting, interpreting, and organizing social school spirit. Children naturally associate themselves into groups. Only too often it becomes a group antagonism against the teacher. It may, in extreme cases, develop into a mob spirit. Or, on the other hand, by sympathy and coöperation, the teacher himself may become the center of a harmonized social spirit which thoroughly organizes the work of the school. When once a right impulse and momentum are thus given to the social spirit of the school, it brings decided advantage. It carries many of the weaker and less determined spirits along a good line of development. It also gives the natural social leaders among boys and girls a chance to assume their proper place and to exert their right influence. The educator should find a way to combine the varieties of individual spirit with social spirit and progress. After all, individual traits furnish the source from which all social organization develops. In the evolution of society individual peculiarity and freedom are quite as important as the social type. Personal initiative, freedom of judgment, and independence of action are the essential bases for a large part of the progress of society.

The teacher's problem is to find a way of dealing with individuals according to their peculiar traits and dispositions so that they will gradually fit into the larger social whole. Strong and distinctive individuali-

ties have the power to make or mar society. They have the independence of thought and the strength of character to become leaders. Properly developed they become the preservers of what is good and the advocates of what may become better. The growth of society depends upon the education of such leaders. Alexander Hamilton was just such a character whose talents were rightly directed. Aaron Burr, with almost equal talents, became a source of danger to society and the State.

This sympathetic insight into individual disposition and this appreciation of social spirit in groups and classes are, as it were, the two wings which bear up the teacher in his mental flight. If either of these wings is clipped or disabled, he will have but an irregular and broken movement. The equipoise between these opposite mental attitudes gives that broader range of thought and feeling which insures a safe course of action.

We shall have occasion to discuss this dualism again under the head of class instruction.

VII. In discussing the contradictory elements and pairs of elements involved in school management, we meet, finally, a triple combination of necessary qualities which are hard to unite in school administration. In exercising authority over children the teacher uses and combines the three primary functions of government. He is, in his one person, the lawmaker, the judge, and the executive officer. This is giving large powers into the hands of one person. He can use his

own judgment as to how far a child has transgressed his law and as to the penalty to be inflicted. He can proceed at once to the execution of his sentence without interference. If he is a strong teacher he can be very arbitrary and tyrannical. In short, he exercises the three different functions of government in full measure. It is a matter of much skill and discretion to combine in his one single action the strong, characteristic attributes that go distinctively into these three quite different functions. As a lawmaker, he needs the kind of wisdom which covers a wide knowledge of all the facts and conditions which we have thus far described as involved in his work. Only thus can he make laws adequate to satisfy these conditions. As a judge, he possesses the judicial temperament. He will show a fully enlightened, impartial, well-balanced mind. He will estimate penalties fairly. If he takes pains to be deliberate, fair-minded, that is, just, in his judgments, he is almost certain to command an increasing respect. Lastly, a strong, energetic will, steady and sure in its action, is a very necessary quality of a school ruler. If he has all these distinctive qualities well balanced, he is fitted to govern a school. To possess any one of these qualities in full measure is a worthy achievement. In modern governments, whether of City, State, or Nation, these three functions are separately exercised by three different sets of persons. One of the great difficulties in politics is to devise a system of government by which we shall be able to secure qualified specialists in each of these three departments. No civilized nation

to-day permits all three of these functions to be monopolized by one person or group of persons. But in the teacher, we take the risk and venture to combine all these high and difficult attributes in one person. He is called upon to work out the coördination and harmony of these and of other more or less conflicting elements. This constitutes the peculiar difficulty or problem that attaches to disciplinary and administrative work in education.

From this discussion of school management we may draw certain conclusions: —

1. By an examination of these various conflicts we find that the teacher must take a deep look into his own nature, and into that of the child. It involves reflective self-examination and penetrating, sympathetic, objective observation of children. He finds that he is subject to the very laws which he attempts to apply to children. Only he must have fully learned the lesson before he can apply it freshly to those now caught in the crude process of learning.
2. The points of special difficulty in school management appear at those junctures where two opposing principles threaten to produce conflict. At these junctures the teacher must take time to acquire a broader, more constructive view which not only dissolves the conflict, but, by the union of these forces, gets the full benefit of their combined strength.
3. He is usually accounted a strong teacher who is sufficiently large-minded and many-sided and well

balanced to combine these various pairs of conflicting elements into the unity of his own personal life. Thus equipped, he sets out confidently with the purpose of molding the character of the young through his personal influence.

4. Yet this so-called strong teacher, with his positive and aggressive personality, meets the child with his impulses, disposition, and habits. Unexpected results follow and a new and still more difficult problem arises. If conflict is to be avoided and coöperation with children along right lines gained, it will be necessary first of all to get into sympathetic relation to them, and to organize the whole campaign of education with reference to their nature and peculiarities.
5. The school itself is a society, and has for its solution that fundamental problem of all society — child *versus* the social whole. On the one side, the training of the child into service and subordination to social needs, and on the other, the duty of society toward the child, to give him freedom and opportunity for self-realization. Child and society must be brought into proper mutual adjustment to the equal advantage of all.
6. All these problems culminate in the problem of government, with its triple array of those primary qualifications which are to be coördinated and organized into the unity and balanced strength of the teacher's character.
7. The problem of the school is the problem of the

home, of the local community, of the State, of the Nation, and of international coöperation. The school is trying to work out the fundamental problem of social organization.

In the previous discussion, we have made use of occasional illustrations to give a more concrete and experimental basis for our argument. It would be possible to enlarge indefinitely this phase of the treatment. For this purpose the whole field of experience could be drawn upon. The theory of contrasts and contradictions requires to be illustrated from many points of vantage in schoolroom practice. The difficulty of combining these contrasted principles and successful modes of doing this can be much more completely illustrated. We can all reproduce in memory the distinctive qualities of those teachers who have taught us in childhood and youth, as well as those known to us in later years. How many well-balanced teachers can we recall who combined in good proportion such discrepant qualities as critical keenness and kindly encouragement, severe firmness combined with gentleness, genuine seriousness and gayety or humor, firm dignity and kindly familiarity, strong self-respect or egoism and humility, a dominating will and many-sided sympathy and appreciation? In how many cases do we find that those who were accounted strong teachers were strong in one quality and weak in its counterpart, and therefore one-sided? We may discover that human nature in teachers tends to a pre-

ponderance of one strong quality rather than to a balancing of several pairs of antipodal virtues. Our own daily experience in the schoolroom offers us frequent opportunity to test out the ways of combining such opposites as helpfulness and self-help, control and freedom, reserve and spontaneity, seriousness and humor, etc.

In this connection, biography and good novels furnish abundant illustrations of wise and unwise modes of treating children. The *Autobiography* of Franklin and of John Stuart Mill, Dickens's novels, *Jane Eyre*, *School-Days at Rugby*, Pestalozzi's *Leonard and Gertrude*, *Jean Mitchell's School*, the *Hoosier Schoolmaster*, are illustrations.

A few of the famous schoolmasters who embodied the principles set forth in the foregoing discussion are briefly described as follows: —

Among famous teachers, Fénelon, the author of *Télémaque*, illustrates the combination of opposing elements that enter into the make-up of a strong teacher. He was one of the great Frenchmen of his time, 1651–1715.

> Suddenly he was called to the responsible position of preceptor of the dauphin's son, the young Duke of Burgundy.... No man probably was ever better fitted than Fénelon for the difficult position which he now assumed, and to which he mainly devoted himself during the next six years (1689–95). He was a born teacher in the highest sense, — gifted with the most charming qualities of patience, sweetness of temper, tact, and address, yet inflexible in principle, and severe and unbending in his methods of training. He had the manners of a *grand seigneur*, with all the intellectual refinements of an

accomplished churchman. Saint-Simon in his Mémoires has left a portrait of him about this time which has often been quoted, and from which we extract only a few sentences. "He was a tall thin man, well made, pale, with a large nose, eyes whence fire and talent streamed like a torrent, and a physiognomy the like of which I have never seen in any other man, and which once seen one could never forget. It combined everything, and the greatest contradictions produced no want of harmony. It united seriousness and gayety, gravity, and courtesy — the prevailing characteristic, as in everything about him, being refinement, intellect, gracefulness, modesty, and above all *noblesse*. It was difficult to take one's eyes off him. All his portraits are speaking, and yet none of them have caught the exquisite harmony which struck one in the original, or the exceeding delicacy of every feature. His manner altogether corresponded to his appearance; his perfect ease was infectious to others, and his conversation was stamped with the grace and good taste which are only acquired by habitual intercourse with the best society and the great world." He had need of all his brilliant and solid qualities in the task which he had undertaken. The young Duke of Burgundy, as the same writer remarks, "was born with a *naturel* which made one tremble. He was so passionate that he would break the clocks which summoned him to some unwelcome duty, and fly into the wildest rage with the rain which hindered some pleasure." He was withal warm-hearted and clever, — in fact, "dangerously quick in penetrating both things and people." Fénelon had full scope for the exercise of his marvelous educational art, and the result was a success far beyond what is usual in such cases. The impetuous but affectionate and bright child grew under his charge into an earnest, well-disciplined, and promising, if somewhat over-scrupulous and timid youth, whose life, if spared, might have brought blessing to France.[1]

If such a remarkable skill and personality were required to train one boy successfully, we are tempted to inquire what qualities are needed in a teacher of forty children?

[1] *Encyclopædia Britannica.*

Vittorino da Feltre, the most distinguished Italian schoolmaster of the fifteenth century, for many years at the head of the school La Giocosa near Mantua, was notable for his gentleness and firmness.

Vittorino definitely held himself the father of his scholars. It was with him no formal claim. His school entirely absorbed him. He watched the youngest with affection and hope, the elders with pride and confidence. Himself moving always amid the larger things of life, the power that went forth from him insensibly raised the tone of thought and motive in those around him. His singleness of purpose was quickly felt, and a word or even a glance of disapproval was, with the keenly sensitive Italian youth, often sufficient to bring tears of shame and repentance to the eyes of a culprit. Living a common life with his scholars in meals, in games, in excursions, always sharing their interests and pleasures, his control over the sixty or seventy boys under his charge was such that harsh punishments were not needed. Naturally quick-tempered, he had schooled himself to a self-control which never gave way except in face of irreverence or looseness. Corporal punishment was very seldom resorted to, and then only after deliberation, and as the alternative to expulsion. For ill-prepared work the penalty imposed was the compulsory relearning of the task after school hours. But it was part of Vittorino's purpose to attract rather than to drive, and to respect the dignity and the freedom of his boys. So he refused, after fair trial made, to force learning upon an unwilling scholar, holding that nature had not endowed all with taste or capacity for study. It is characteristic of the time that Vittorino could appeal with confidence to the personal and family distinction conferred by excellence in the study of Letters. It was a motive to which most youths of spirit eagerly responded.[1]

A study of the life of Thomas Arnold will show a similar combination of strength and power of personality with gentleness and affection.

[1] Woodward, *Vittorino da Feltre, and other Humanist Educators.*

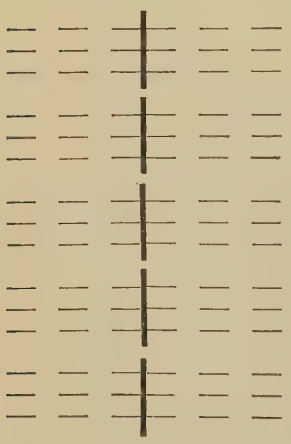
Horace Mann also in his work as a teacher shows that inflexibility of purpose combined with personal charm and absorption into the lives and interests of students that gave him strong influence over the young.

CHAPTER III

INSTRUCTION — LOGICAL CONTINUITY AND CROSS LINES IN THINKING

In dealing with an important topic in classroom work, the thought movements necessary to a mastery of the materials of knowledge often run counter to each other and produce antagonisms.

These interfering thought waves, however, are necessary stages in the process of mastering and organizing complex topics. One phase of this inevitable dualism in thinking processes can be expressed by a diagram. It shows in a crude way the two opposing thought impulses which play across each other, at right angles, in treating any important topic.



This diagram suggests, first, a strong fundamental thought movement through a series of main topics or subheads, shown by the heavy lines or segments; and second, lateral movements or side issues reaching out at right angles from the main segments, and expressed by numerous lines stretching out to the right and left. This diagram implies an inherent and ines-

capable dualism, which is grounded in the very structure of thinking. We must think backwards and forwards along the main line and also to the right and left in order to keep our balance. We require a double flexibility and range in our thinking.

The physical organism suggests a similar flexibility in seeing. The eyes are not fixed in the head, so as to see only straight forward, like a horse with blinkers, but they can be turned to the right or left or up and down so as to take in a wider range of objects. The head, also, is set on a pivot so as to turn easily and still further increase the range of vision. The mind does not and should not stick to a straight line. It must be flexible so as to take in a wide range of objects. It must even focus attention at times to the right or left, with seeming negligence of the main issue. It may be necessary to check the main line of advance in order to get time to make more or less extended excursions to the right or left. This brings us to the point of antagonism where the lines of thought cross each other, as it were, at right angles. One, in turn, must give way to the other, because they cannot both operate at the same instant.

The process of weaving cloth suggests another analogy to our processes of thinking. In weaving, the threads run in two directions at right angles, and the loom is a device for intertwining these two crossing sets of threads. Thinking, also, projects main lines of thought and then plays back and forth across these main lines with another series of thought relations.

The above diagram suggests, first, a strong series of connected sub-units which give the logical outline of a complete whole or unit of study; second, other lateral lines of thought which radiate from the sub-units as centers. For illustration, if we were studying such a topic as "The Government Reclamation of Arid Lands by Irrigation Projects," we might lay out the series of important sub-topics as follows: —

1. The general physical survey of the Salt River Irrigation Project in Arizona.
2. The building of the Roosevelt Dam. Forming a lake twenty-five miles long.
3. The diversion dam and canals for distributing the water to the lands involved (160,000 acres).
4. Effects of this irrigation upon agriculture, in products, farms, villages, settlements, etc.
5. The Government regulations for division of lands among settlers.
6. Brief description of other similar projects, such as the Truckee and Carson project in Nevada and the Shoshone project in Idaho. Comparison of these three projects, results, etc.
7. Map study to show location and number of the large irrigation projects of the United States Government throughout the West.
8. Extent of private irrigation schemes and comparison with Government works. Increased wealth of the arid regions due to irrigation.
9. Irrigation in Mexico and other countries.

This series of sub-topics gives us a fundamental logical thought movement which develops into a comprehensive survey of an important field of knowledge as embraced in this unit of study. But each of these sub-topics is in turn a center from which we branch out to gather in facts and knowledge materials to be organ-

ized in relation to this center. Topic 2, for example, "The Building of the Roosevelt Dam," runs as follows in its full treatment: —

At the point where the Government decided to build the dam, the river had cut down into the rocks, making a deep, narrow cañon with high walls. Here the Roosevelt Dam was to be built, 240 feet high and 700 feet long, across the narrow gorge. One can, perhaps, imagine how strong and solid such a dam must be built to hold back the waters of a lake so deep and long. It must be laid deep in the solid rock and built with such a broad base and thick walls that nothing could undermine or break it down.

In order to bring the tools and materials to this spot in the mountains it was necessary to construct a paved road from Phœnix through a very broken and rugged country. The cities of Phœnix, Tempe, and Mesa contributed $75,000 to the construction of this fine mountain road. The Apache and other Indian tribes of Arizona furnished an excellent body of workmen for the construction of this road.

In the neighborhood of the dam were found the rock and cement necessary for the construction. This saved the expense of hauling these heavy materials long distances. Here was built by the Government a large mill for the production of concrete to be used in the construction of the great dam. On the slopes of the neighboring mountains were found extensive forests. Much lumber was needed in the scaffolding for the building of the dam and the Government set up two large sawmills to convert the logs into lumber. In the river near the dam was developed an electric plant of some ten thousand horse-power which was used in mixing and handling the cement and constructing the dam. The water-power of the river was, therefore, chiefly used for building the dam which checked the river in its course and caused it to form the lake.

With the completion of the dam a lake twenty-five miles long is formed in the season of floods, and the water thus held in reserve may be used lower down the valley during the dry months of summer.

All the other topics of the main series are treated with similar fullness. By this expansive treatment of each of the sub-topics, we halt, for the time being, the forward movement of thought along the main line, and permit ourselves to digress into the side lines, for a collection and grouping of interesting and necessary material around each sub-topic. There is danger, indeed, that, because of the richness and interest of the materials, we may digress too far and may lose sight of our fundamental thought movement. That the two lines of thought are somewhat contradictory is proved by the fact that an over-emphasis of the one tends to obliterate the other. A not uncommon fault, for example, is that of becoming so much interested in the subordinate side line as to lose connection with the main argument.

We will next take up each of these oppositional thought movements and discuss it more fully.

I. In dealing with any well-rounded unit of study, it is commonly agreed that one should follow a close sequence in thinking. This sequence is developed through a succession of leading steps or sub-topics in the argument. In these sub-topics the essential features of the thought culminate or stand out prominently. This demand for a well-organized series of closely related yet distinctive topics gives a high standard of thinking. To bring this kind of organization into a large, complex unit of study requires strong intellectual effort and well-balanced judgment in holding to a close causal or logical sequence. It demands

careful estimating of values, selecting and grouping of facts, so as to bring the essentials into prominence. Good instruction will hold to this central line of argument. It will not be jumping the track and wandering off into uncertain and unrelated fields. The task of concentrating the mind upon the main steps in the argument is imperative. In our time looseness and diffusion of thought have become a chronic fault.

We have been multiplying studies and accumulating an endless variety of knowledge materials. But teachers have not developed much original power of organization along fundamental thought lines. What organization we have has been imposed upon teachers and pupils alike by the textbook. The textbook organization has usually been accepted as authoritative. In some studies it is good, in others the textbook organization has been poor, as in elementary science, in much of history and geography; and teachers have formed bad habits by following bad examples. Of late, there has been improvement in this regard.

In some subjects, teachers engage in loose conversations and wander about more or less aimlessly among facts and fancies. They lose sight of fundamental controls, i.e., strong serial lines of thought. The impulse to correlate a topic with everything and to follow up chance interests and associations has produced in some quarters a wandering and inconstant spirit in classroom instruction which travels to the world's end in search of novelties.

One of the most difficult and unusual undertakings

for even experienced teachers is to organize well a new and complex subject broad in scope and rich in variety of new materials. To select the controlling idea for an entire unit of study and to follow this up with a strong series of closely related sub-topics for the same, calls for the sharpest kind of thinking. It requires a keen perception in picking out from a mass of materials the pivotal points in the argument, and second, a logical mind to arrange these points into a necessary and convincing sequence. Very few even of the most experienced and capable teachers have acquired this peculiar kind of ability; for our textbook methods of teaching throughout do not lead up to the acquisition of this kind of power. Our writers on education give us few or no examples of it taken from regular school topics. The thing which it has been assumed any one can do if he will only try, is the thing that no one as yet has been bold enough to attempt. The truth of the above statement may not appear as yet, but will be more apparent when we have dealt with the second element in our contradiction.

The peculiar problem of our time is furnished by an over-accumulation of miscellaneous materials which now await the fashioning mind of the organizer who realizes the full value of a few ideas as centers of organization, or better of growing ideas as furnishing the main lines of organization.

II. Now for the other side of this contradiction. While following this main line of thought, the mind also plays back and forth at right angles to it, and

directly athwart its main current, weaving a web of necessary associations and cross-connections. This second cross-fire of thought is quite as fundamental to sound thinking as the main sequence or logical development. It alone can give proper breadth and balance to one's reasoning. Heretofore it has not been so considered. Each important point or sub-topic becomes a smaller center of organization. We understand a fact when we see clearly its causal and vital relations to other important things not involved in the main logical sequence of thought. The study of a topic in its whole environment, i.e., in its various side bearings, is the only feasible way of getting at its real meaning. Much of our best thinking runs into these outward excursions from a central sub-topic into the surrounding world. Otherwise we fail to balance it up in its proper adjustment to life conditions. As in a great railroad system, the tributary branch lines, in the aggregate, may be quite as important in their service as the trunk line. Indeed, they largely supply the main line with traffic. Demonstrations of this truth are needed.

In discussing the harbor of a seaport city like New York, for example, the simple fact that New York has a safe, deep, and commodious harbor is the fundamental thing, and little more than this is mentioned in our textbooks. But this is not adequate for teaching purposes. It is too narrow in scope. Really to understand the harbor of New York City, as the focal center into which is gathered half of the foreign commerce of the United States, it will be necessary to branch out in

several directions into a much broader, richer, descriptive treatment of the subject. This enlargement of the topic to include a fuller background of concrete facts upon which to base a real understanding would reach out somewhat as follows: —

1. Maps showing the local physical character and surroundings, the lower and upper bays, the rivers, the hills, the islands, the location of New York City, Brooklyn, Jersey City, etc. A concrete bird's-eye view is thus gained of the whole situation.
2. The present location and extent of wharfage along the shore-lines of rivers and bays, the local distribution of coastwise and foreign shipping. Locate on the map the wharves of a few of the great steamship lines, as the North German Lloyd at Hoboken; the White Star Line; the Providence and Fall River Line on the east shore of the Hudson.
3. The variety of shipping, ocean liners, river steamboats, sailing craft, ferryboats, tugs and lighters, yachts, war-vessels, and navy yards; shipping docks with the machine equipments, warehouses, and merchandise; a series of harbor pictures is essential.
4. Improvements in the harbor: size and construction of docks; dredging out the entrances; blowing up the rocks at Hell Gate; lighthouses, buoys; the pilot service; expense in such improvements.
5. Forts for the protection of the city and harbor from possible foreign attack: location of chief batteries at the Narrows, on Sandy Hook, etc.
6. The emigration office and Ellis Island; quarantine station; the influx of foreigners; summer travel; picture of loaded steamers and of Ellis Island.
7. Sights in the harbor: Governor's Island; the Statue of Liberty; the great bridges; views of the city from the deck of incoming vessels; amusement resorts and bathing-stations along the shores.
8. The custom house, customs officers and their examination of goods; smuggling; revenue cutters; control by the National Government.

9. The harbor in relation to inland traffic by water and by rail; railroad stations and relation to harbor, docks, etc.; concentration of great traffic lines at New York.

The vast majority of inland children have no adequate notion of such a seaport and harbor, one of the most important centers and types of human activity in the world to-day. By carefully picturing and understanding one such harbor, they may soon learn to interpret other large seaports in the United States and in other lands.

Is it worth while, once in our lives, to appreciate in a lively fashion the sights and activities presented in such a world-harbor? If so, we must take time to view it in these various aspects, to get the full setting of the idea. We must halt in our journey long enough to make a series of excursions which give us concretely, from various points of view, the essential aspects of our topic. Any really important idea demands such a treatment.

The second stage in handling a big topic like New York harbor should involve comparisons. The harbors of the cities along the Atlantic Coast should be briefly shown by local maps and descriptions, and their advantages and disadvantages as compared with New York made clear. Boston also has a large harbor, but not so deep nor so commodious as that of New York, and not so favorably located for Western inland trade. Philadelphia has a limited river-harbor, and its entrance-way up the Delaware is too shallow for the largest vessels. Norfolk on the Chesapeake has a spa-

cious entrance and harbor, but less favorable connections landward, and across the mountains. Charleston and Savannah, like New York, have dredged channels. In the harbors of Southern cities these channels are protected by rock jetties, leading from the open sea into the harbors. New Orleans had great difficulty in getting large ships to the docks because of the shallow mud-bars at the delta outlets of the Mississippi, till Captain Eads produced a deep channel with his wise scheme of willow-mattress jetties. This opens the whole Mississippi Valley to foreign trade at New Orleans. San Francisco has a harbor entrance and a great bay that rivals New York City's advantages. It has also important connections with the hinterland, though not so good as New York's. The Puget Sound cities also have deep salt-water harbors and a world traffic. On the Great Lakes, Chicago has produced an artificial harbor and plans extensive harbor improvements. Duluth has a land-locked harbor that will rival the harbors of seaboard cities, while Milwaukee, Cleveland, Detroit, and Buffalo have important harbor advantages, partly natural, partly artificial. The relative importance of our great seaport, river, and lake cities is based in large part upon the harbor facilities they have been able to provide. European and other cities may be later drawn into this comparative survey, as Liverpool, Hamburg, Antwerp, etc. Full harbor maps should be shown.

The habit of making such comparisons in the second stage of the treatment of large topics is growing upon

us. It is a surprisingly efficient means for the organization of rich and varied materials. This comparative thinking is also an excellent training of judgment, of how to estimate values. It, moreover, extends the range of important facts organized under one idea or topic. It brings out clearly the power of one significant idea in interpreting a long series of important facts which are thus brought together and organized into unity of thought. It is just in this way that we come to an appreciation of those fundamental ideas which are now operative on a large scale in organizing the industries, and in the social-political activities of the world. The failure to make such comparisons is due to an unwillingness to spend time in branching out at right angles to the main line of thought in a series of topics. Comparisons are based upon similarity and contrast, and they call for an outward movement of thought crosswise to the main series of topics. This is further illustrated by the fact that the harbor of New York is merely one topic in the main series on New York City.

Other topics in this large unit of study which permit this same mode of treatment by full description and extended comparison are as follows: —

1. Foreign and domestic or inland commerce centering in New York.
2. The water supply and sewer system; aqueducts; reservoirs.
3. Sanitary improvements; cleaning the streets; the park system; hospitals, etc.
4. Manufacturing.

5. The rapid transit systems.
6. The population, races and language, and immigration.
7. Education; schools and colleges.
8. Government.

Each of these topics admits of a treatment similar in the two stages to that of New York Harbor: (1) The stage of concrete amplification. (2) The broader comparisons with other cities along similar lines. In brief, each sub-topic in such a complete unit of study admits of this enlargement at the two important stages of its treatment. Much of the best teaching and thinking is found in these outward excursions, by means of comparisons, from a central topic into the concrete environment and into the more distant world beyond.

In every important unit of study, therefore, we must learn to set up a strong logical series of sub-topics, each of which is a smaller center of organization. In such a series, each sub-topic holds a close relation to the topic that precedes and to that which follows. This requires a masterly grasp of the sequence of thought, stretching through the whole length of the unit of study, as we may say, longitudinally.

To this we may add, secondly, the cross-sectional thinking illustrated by the example of New York. To many persons this second mode of thought, branching off at right angles from the main line, seems to be a divergence from sound, logical thinking. The two modes of thought are in fact oppositional, and it takes a stronger mental effort to combine them properly than to follow one exclusively or chiefly. Scholarly thinkers

sometimes make the mistake of accepting one of these as predominant. Besides, teachers, like other people, are sluggish and indolent in their thinking, and think in too narrow circles. Or it may be said more charitably that people follow habits of thought, and the more common habit, even with careful thinkers, is that of a narrow logical sequence. Many people, in fact, pride themselves upon a clear and rigid line of argumentation like that illustrated by the "Wonderful One Horse Shay." But no fact or topic is comprehended in its meaning by following a single important relation to the next topic. The important principles and facts are those which have numerous and far-reaching connections. This many-sidedness of relationship is what gives them their importance. In this sense they are central topics embodying the big, comprehensive, unifying principles that give simple, far-reaching interpretations of the world.

A serious fault of our habits of study is the fact that we have too many things to learn, and but little time to think, that is, to reflect in wider circles upon these relations. In school-work we should spend at least half our time in reflection. What matters it whether we have memorized the numerous facts and details catalogued so uninterestingly in our books? Rather, let us ask, have we looked into the meanings and significant relations of the few central topics most deserving of study? Have we thought out our topics strongly in the two directions illustrated above?

Our best thinking combines these two divergent

modes of thought, the steady and consistent development of the main line of mental effort, and the constant enrichment of this central idea with concrete illustrations and comparisons drawn from the side lines. The student should never lose sight of his main line of thought, nor should his thinking be closely confined to this single strand. The tendency to continuity of thought should be balanced by an equally strong effort to find a larger setting for the main thought in all its fruitful bearings upon the world. Otherwise it hangs in isolation without proper relation to complex world realities. These two opposing thought impulses should be brought into coöperation in a manner analogous to the operation of the centripetal and centrifugal forces which combine their influence in such a way as to bring the earth and planets into their steady orbits.

From the point of view of not combining these opposing tendencies into a larger unity, three forms of error come to light: (1) Some persons are strong and thorough in the main channels of thought, but they think within too narrow boundaries and fail to enjoy the broader, richer interpretation of their ideas. Their thoughts are apt to hang in theoretical isolation because they are not connected up sufficiently with the world of realities. (2) Others scatter too widely in their thought relations and fail to organize firmly upon the central line of topics. This results in a wandering looseness and promiscuousness in study. The materials of knowledge are not properly knit together and interpreted clearly in the light of important vital truths.

Both these tendencies are one-sided and fail to harmonize the opposing principles.

The third rather common fault is to emphasize neither central organizing ideas, nor correlations, but to memorize a multitude of facts more or less miscellaneous and poorly interpreted. Our overcrowded course of study favors this third tendency.

It requires pronounced organizing ability to treat studies with adequate appreciation and unification of the two modes of thought. Much more time must be given to reflective thinking if we are to form habits of tracing out these antithetical relations. To keep the mind in balance between the two movements, properly to alternate them and thus to weave a firmer web of knowledge, is a great achievement. Gradually to form such habits of thought in children, both modes of thinking should be cultivated in the leading branches of knowledge.

If the foregoing argument as to the interplay of two divergent but necessarily coöperating thought movements is correct, we can lay down a basal principle of instruction in dealing with large topics. The process of working out a large topic on the basis of a fundamental idea becomes the most general determining principle of method. For ourselves we believe it possible to demonstrate this mode of treatment of large topics in most of the important school studies, namely, in history, natural science, language, geography, and the industrial arts (i.e., construction in the arts). In the main, the treatment of units of literature (reading and gram-

mar) has the same basis. The processes in arithmetic, like that of long division, follow a similar but modified process.

There are two reasons, perhaps, why this mode of treatment of large topics has not been recognized or more generally applied: (1) We have not been accustomed to grant important ideas and principles their proper and legitimate place in furnishing the organizing centers and trunk lines of thought. (2) We have not seriously attacked the problem of determining the conditions under which these important ideas originate in the mind and develop to their full fruition. How much illustrative and descriptive material is it necessary to group around such an idea in order to bring it into the right illumination? How much more of comparison and amplification of this idea is required to show the range of its application? The writers on general principles of education stop short with the statement of their principles. They never attempt to deal with the subject-matter of any topic in science, or history, or geography, so as to furnish an answer to these two great questions. They do not seem to have discovered that these are two very important questions, which set up a problem far more difficult to solve than the problem of merely stating the general principles as they are usually propounded. They ought to demonstrate their principles concretely.

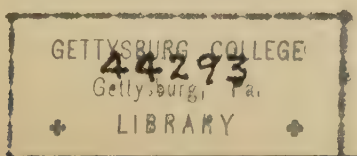
In selecting and organizing the varied and complex materials that belong properly in the treatment of a large topic, the thinker must take a broad survey of

the main line of thought, properly broken up into its chief segments. At the same time he must think out crosswise along the side lines, and gather in the appropriate concrete material which alone can give a true setting for the central idea. To keep these two necessary but opposing tendencies of thought in balance is the difficult thing. This kind of organization of subject-matter is therefore very special and unusual.

It must be admitted that in setting up this standard of organization we are demanding a thoroughness and richness of knowledge which few teachers at present possess. But it is the kind of knowledge that they ought to have if they are to teach. Nor is it at all impossible or unreasonable that teachers should be thus trained in the professional schools for the preparation of teachers.

In this connection a convincing argument is furnished in favor of complete and rich scholarship. In fact, for teaching, a peculiar kind of richness and reflective quality in scholarship is required which even our higher schools often fail to furnish. The principles and practical maxims of pedagogy are helpless unless they are supported at every point by a copious and well-organized body of usable knowledge. Even writers on education should never forget that their theories, be they never so good, need to be backed up by a whole well-organized army of knowledge materials.

The following treatment of the Erie Canal illustrates more fully the interplay of these two thought movements in a large topic.



THE ERIE CANAL

Outline of topics

1. The opening up of central New York at the close of the Revolution.
2. The growth of the canal idea and arguments in its favor.
3. Route to be followed by the proposed canal, size, etc.
4. The canal construction and its difficult problems.
5. Completion of the canal and the celebration that followed.
6. Important and far-reaching results.
7. Other traffic routes across the mountains. The old National Road. Canals and portage road in Pennsylvania.
8. Railroad building and the New York Central Railroad.
9. First enlargement of the canal.
10. The present reconstruction of the canal as a barge-canal.
11. Comparison with the Illinois and Michigan Canal, and the Ohio canals.

1. Even before the Revolution people had thought of the possibility of opening up a waterway across New York, from the Hudson to the Lakes, but nothing could be done in the way of roads or canals while the Indians held central New York. Sullivan's expedition into the Iroquois country during the Revolution (1779) had broken up the powerful Indian confederacy which for two centuries or more had controlled central New York.

At the close of the Revolution, then, white settlers were free to push over hills, valleys, lake regions, and swamps of central New York as far as Lake Erie. Along this line from Albany to Buffalo were to be laid out the roads which would connect the East and the West; for along this route, alone, there were no hills to climb.

After the Revolutionary War a wagon-road was built across the country from Albany to Buffalo, but it was a long and tedious haul over bad roads, through woods and swamps, so that it cost about one hundred dollars to get a ton of wares from New York to Buffalo.

2. The project of building a canal from Buffalo to Albany was early suggested. Gouverneur Morris argued that as

Lake Erie is 570 feet higher than tidewater at Albany, it would be possible to dig a channel and convey a stream that would carry boats directly to the Hudson. DeWitt Clinton, afterward governor, was an enthusiastic advocate of such a canal, and he, with others, had surveys made and formed plans. But the undertaking was too difficult and expensive for private individuals. Only a large State like New York could supply the money necessary for such an undertaking. Finally DeWitt Clinton presented the matter to the Legislature of New York in 1816. Some of his arguments were as follows: —

Such a canal would greatly cheapen the transport of goods from Buffalo to New York. This would make New York City the outlet for goods coming from the Lakes and the Ohio country, and in this way it would rapidly grow into a great city.

Again, New York State was fortunate in having the only route between the East and West where there were no mountains to climb as in Pennsylvania and other States farther south. It was the only place where a canal could be built.

The shipment of goods down Lake Ontario and the St. Lawrence would only injure New York State, and besides, the St. Lawrence was blocked with ice during a long winter.

The country through which the canal would pass was a rich and fruitful region, and with a good canal for shipment it would settle up rapidly and become very prosperous.

The canal itself could be easily supplied with water from Lake Erie, and the boating along the canal would be much safer, being free from the winds and storms which prevail on the Lakes and on the ocean.

A pair of horses or mules could haul a great canal boat loaded with goods along the canal at the rate of thirty miles per day, and that would be very cheap and rapid compared with any other kind of shipping.

After much discussion these arguments won the day, and the legislature voted to undertake the construction of the canal at State expense.

3. The canal was to be dug along the Mohawk Valley, then across New York north of the Finger Lakes, not far south of Lake Ontario, to Buffalo. The main canal was divided into three sections, the western part from Lake Erie to the Seneca

River, the middle from Seneca River to Rome, and the eastern section from Rome to the Hudson at Albany; in all, 360 miles. It was to be four feet deep, forty feet wide at the top, and twenty-eight feet wide at the bottom. The sloping sides were to be walled with stone.

4. The first contracts for digging were let in the spring of 1817. The farmers along the route had been engaged to do the work, at first with spades and wheelbarrows, but this was too slow, so scrapers were invented to be used with teams of oxen. This made the work go much faster. Money was scarce among the farmers, and they were glad to engage in the work to get money for their needs.

A number of serious difficulties hindered the progress of the work. First were the great forests, thick and tangled, just west of Rome. Trees must be cut down and stumps pulled. The ground was deeply matted with roots. A stump-puller was sent from England, and a great plow with two yoke of oxen was used to loosen up the roots. In some places the canal led through swamps, and hundreds of men were sick with fever and ague. Thus for a while near the Seneca River the work almost stopped. Other stretches of the canal had to be blasted out through rock, and this was slow and laborious.

Important rivers like the Genesee had to be crossed, and this was a serious problem. Great massive stone arches were built across the valleys and streams, and stone troughs or aqueducts were built upon these, which formed a part of the canal. The rivers then could pass under these arches. Stone had to be hauled for building these arches and aqueducts.

The canal had to be built at several levels, on account of the hilly and sloping nature of the land in places, and had to pass from one level to another, say ten feet higher or lower. At these places stone locks had to be built, with double gates at each end, and constructed long and wide enough to let boats pass into them so as to be raised or lowered as the water was let in or out.

Work was going on in all these sections at the same time. As fast as any considerable part of the canal was completed, the water was let in, canal-boats were built, and goods shipped. The charges on these shipments, or tolls, counted up rapidly to a large sum, and people began to see that the canal, when finished, would be very profitable.

5. At last the canal in all its parts was completed in 1825, being 365 miles long, having 72 locks and many stone aqueducts. It crosses the Mohawk River twice. Its entire cost was $7,600,000.

Of course the completion of the canal was celebrated in Buffalo and New York and at all the towns and cities between. As Governor Clinton and a party of distinguished guests entered the canal at Buffalo in boats to travel to New York, a cannon was fired off, and this shot was followed by a series of cannon distributed along the whole route within hearing distance of each other. In this way the news was telegraphed to New York. All along the route they were received with speeches, feasts, and jollification, and at New York, two kegs of water from Lake Erie were poured into the New York Bay to signify the union of the Lakes with the ocean. It was really a great event in American history, as the products of the West could find easy transport to New York and to Europe by water.

6. Important results quickly followed the completion of the canal. On the opening of the Erie Canal in 1825, the cost of freighting a ton of goods from Albany to Buffalo fell from $100 to $6, and later to $3. The whole farming country for miles back on both sides of the canal quickly grew into a rich, productive region. All along the canal, cities sprang up which in time have grown into large and populous centers of manufacturing. Nearly all of the large cities of New York State are located on or near this canal or the Hudson River. Smaller canals were built south and north of the Erie connecting it with the Lakes and greatly increasing the trade. The success of the Erie Canal was greater than even its friends had expected. The tolls from 1825 to 1834 amounted to $8,500,000, which was more than the original cost.

From the Ohio country and from all the Great Lakes region, products began to flow in toward Buffalo and along the canal to Albany and New York. The Eastern people desiring to move West found it easy to transport their family goods by the canal and Lakes to Cleveland, Detroit, and Chicago, and to move out to farms in Illinois, Indiana, Michigan, etc.

From the opening of the Erie Canal, New York City began to grow and soon outdistanced all other cities in the United

States in wealth and population. For some thirty years this canal was the chief highway of traffic for heavy goods between the East and the West. It was also the chief mode of travel for people and families going between the East and the West. During this period the tolls on the canal brought in a large revenue to the State.

7. Cities, like Philadelphia and Baltimore, on the eastern seaboard, were very anxious to share in the rich commerce of the West. Even before the building of the Erie Canal the Government of the United States had constructed the old National Road from Cumberland on the Potomac, across the mountains and through southwestern Pennsylvania to Wheeling on the Ohio. This road was afterward completed across Ohio, Indiana, and Illinois to St. Louis, and cost the Government about $7,000,000, not much less than the Erie Canal. It was a well-built stone road as far as Wheeling, with massive stone bridges, and to this day is a good, solid highway. For many years it was thronged with wagons and emigrants, and their stock and goods moving to the west, into the Ohio Valley. The old hostelries along the road are yet fine old landmarks of the day when Henry Clay and Abraham Lincoln traveled over this road by coach to Washington.

Philadelphia sought to reach the West by still another route. Canals were built by the State along the Susquehanna and up the Juniata to the edge of the mountain-ridge between Johnstown and Altoona. It was intended to carry the canal through this mountain barrier by a tunnel. Another canal connected Johnstown with the Allegheny River and Pittsburg. But the tunneling of the mountain proved too difficult, and a portage railroad was built across the mountain-ridge, at State expense, to connect the two canals. Another railroad was built by the State of Pennsylvania from Philadelphia to the Susquehanna, and thus Philadelphia was connected from tidewater on the Delaware with the Ohio at Pittsburg. This became a great route of traffic between the Ohio country and Philadelphia.

During this early period we find these three great routes competing for the traffic of the West. All of them were very important in the development of the West and in bringing about an easier interchange of products between the East and the West.

8 Between 1840 and 1850 railroads were projected and built across the Alleghanies to assist in handling the immense traffic that had grown up, and to bring about a much quicker transit of goods and persons over long distances. It was only gradually and slowly that engineers and capitalists learned how to build and manage railroads. At first they were very crude and clumsy. Instead of engines they used horses and mules to draw the cars, and there were no cross-ties connecting the two rails. There were no stations or freight-houses, no regular times for trains to start, no headlights, no sleeping-cars, no telegraph.

The New York Central Railroad, at first built in sections and afterwards combined into one road, ran parallel to the Erie Canal between Albany and Buffalo, and on down the Hudson to New York. When this railroad connection was completed, goods and persons could be transported much more rapidly, and a large share of the trade was transferred to the railroad. But so great was the volume of trade that both canal and railroad were kept busy. Freight rates on the canal were so much cheaper for heavy produce that for grain and farm products it was much better to use the canal. The cheap rates on the canal kept down the railroad rates.

9. In the early years the canal was so successful that people began talking of enlarging it. By making it deeper and wider, larger canal-boats could be used and transport would be cheaper. In 1835 it was decided to enlarge the canal, making it seventy feet wide at the top, and seven feet deep, and at the same time larger double locks were to be constructed. This was a costly undertaking, and its working out was not completed until 1862. This great improvement cost $15,000,000, just twice the original cost of the canal.

The competition between the canal owned by the State and the railroads owned by private corporations continued. The New York Central Railroad built double tracks across the State and later what amounts to four tracks, so vast was the volume of business with the West. Other railroads across New York to Buffalo, as the Lehigh and Lackawanna, were built, and there was plenty of freight for all.

10. Finally to enable the Erie Canal to compete better with the railroads for the Western trade, a second and much greater rebuilding and enlargement of the canal was talked

about. The great railroad systems must not be allowed to gain a monopoly of trade and fix freight rates. There was a hot political campaign in New York State while Roosevelt was governor, and at the end of the campaign, it was decided by a large majority of the voters of the State to spend $100,000,000 enlarging the Erie Canal. This really meant the building of a new and much larger canal.

The course of the canal was considerably changed; the Mohawk River was to be deepened and canalized and pools formed by means of locks. The canal is to be 125 feet wide at the top, 12 feet deep, and be able to float barges carrying 1000 tons of freight. Great locks are to be built, large enough to pass two of these barges at once. Work on this improvement has now been in progress for about ten years, and when completed will make the Erie Canal one of the greatest canals in the world, and will not only furnish a cheap transport of Western products by water to the seaboard, but will compel the railroads to lower their rates.

11. A comparison of the road-building and canal-building across Pennsylvania to connect with Pittsburg and Wheeling, and across New York to connect with Buffalo, will make it plain that the people of the United States have spent vast sums of money in the effort to bring about easy and rapid communication and transport between the Ohio River and Lake States on the one side and the Atlantic seaboard cities on the other. Later the Baltimore and Ohio Railroad across Maryland and Pennsylvania, and the Chesapeake and Ohio Canal across Virginia and West Virginia to the Ohio Valley served the same purpose. The great traffic routes in the United States have been built from east to west, often across the mountains, not north and south parallel with the mountains. The Welland Canal between Lake Erie and Lake Ontario and the canals around the Rapids of the St. Lawrence also compete with the New York route and carry much freight from the Great Lakes down the St. Lawrence River.

Just as in the East, canals were built across New York to connect with the Western lakes, so in Illinois a canal was constructed later, in 1848, from Chicago on Lake Michigan down the Illinois River so as to unite the Mississippi River and the Lakes. Several such canals were also built across

Ohio to connect Lake Erie with the Ohio River, and across Indiana to the Wabash River.

In recent years a strong effort has been made in Illinois to build a much greater canal from Chicago and down the Illinois, so as to secure great barge traffic between Chicago and the Gulf; also from Pittsburg down the Ohio and from St. Paul down the Mississippi to the Gulf. But while the United States Government has spent large sums in the improvement of navigation on the Ohio and along the Mississippi Rivers, these larger schemes have not yet taken effect.

Conclusions from the above illustration: —

1. The two diverging lines of thought, the longitudinal and the outward-radiating, are clearly marked. The main sub-topics form a connected, developing series. But each sub-topic expands into a larger, richer treatment. To keep these two thought movements in proper balance should be the aim of good instruction.

2. In this study of the Erie Canal an idea is worked out step by step into a comprehensive and even continental importance.

3. A large number of leading geographical facts is mastered as to their names, locations, and relative importance; e.g., cities, rivers, States, mountains, lakes, and traffic routes.

4. The interpretation of the facts in the light of a basal idea which organizes them into a complex unit puts a rational connection and meaning into the whole.

5. The comparisons furnish the basis for a strong and expanding thought movement, surprisingly rich in its results.

6. As the subject develops, the important facts range themselves into parallel series which give opportunity for good repetition drills; e.g.: —

New York	Albany.....	Buffalo.
Philadelphia.....	Harrisburg.....	Pittsburg.
Baltimore.....	Washington.....	Wheeling.
Norfolk.....	Richmond.....	Cincinnati.

Again, —

Hudson River...	Mohawk River..	Lake Erie.
Delaware River..	Susquehanna R..	Ohio River.

Chesapeake Bay.	Potomac River..	Ohio River.
Lake Erie.....	Welland Canal..	L. Ontario and St. Lawrence R.

7. The growth and interpretation of this geographical topic, based on physical features, natural products, and the demands of transport, run exactly parallel with the westward expansion of the American people, the most fundamental and important movement in our history. History and geography could not be better combined.

CHAPTER IV

DICTATION AND INDEPENDENT THOUGHT

In mastering lessons, by children, two distinctly opposite habits of thought are highly prized. One is the ability to appropriate an assigned lesson, as in history or geography. It requires concentration of thought upon the treatment as given by the author in a text-book or as presented by the teacher. An attentive memory to grasp and retain the subject in the form and order furnished by the author is essential. The author's organization, point of view, and handling of the topic are to be mastered and reproduced in essentials. Many excellent teachers feel proud of students who can reproduce a lesson or series of lessons showing a thorough mastery of the organized outline and detail of the author's treatment. Several times within a year I have heard good teachers speak with enthusiasm of those students whom they could bring to this standard of excellence. Such a lesson in content, organization, and form may be called a dictation (not in exact verbal form, but in the essentials of thought and expression). The characteristic mental act of pupils in such lessons is not independent thought, but a mastery in conformity to an author's ideas, arrangement, and terminology.

The other habit referred to is that of independent thinking, of free individual judgment applied to subject-matter. In arithmetic and algebra, problems are

given which call for constructive and independent thought. A difficult problem in arithmetic may require an original and ingenious combination of given elements to point out a solution, and it may also require a complex figure process in careful reckoning. Experiments in physics and chemistry require some degree of originality in combining elements and in drawing inferences. In designing constructive problems in the manual arts there is a wide, open field for originality and invention. The designing of a rowboat of the simplest construction is a problem that will employ a boy's best original effort and its execution will put his practical ability to the full test. In composition and more elaborate theme-writing, the independent, original selection and organization of thought materials are placed at a high premium. Self-reliant thinking, which is unshackled except by the necessary conditions of thought, is the desirable thing. Children should learn to exercise freedom of thought and the broad judgment that is necessary to ballast it. If a child is to become a robust thinker, it will come to him only through robust experience in self-reliant thinking.

These two qualities in the student — conformity to dictated modes of thought and freedom of judgment, or the very spirit of freedom in thinking — seem to exclude one another, or at least they do not enter easily into close companionship. It is not in our purpose to undervalue either of these important phases of mental power, but to recommend both of them strongly, and to accept each at its full face value. It is our particular

business to show up the strong side of each of these phases of mental effort and then to make clear the possiblity of a friendly coöperation between them in spite of their seeming antagonism.

In the nature of the case, much of the knowledge material in school studies and also its organization must be arbitrarily imposed upon children. Language, for example, in its usual forms and grammatical rules, is a necessary dictation, based upon usage and convention. A child cannot be permitted to invent his own word-forms, nor to make his own arbitrary rules of syntax. Textbooks in grammar, arithmetic, and history are under the necessity of giving the selection, order, and, in part, the mode of treatment of topics. Nor is the teacher free to break into this order unless he has something better to offer which he in turn dictates to his pupils. Our alphabets, our methods of notation in arithmetic, our decimal scale, and our standard measures and tables are pure dictations. These, like spelling, writing, and other formal modes of expression, have taken on stereotyped forms and must be accepted and mastered as given. Careful requirements and repeated drills on these assigned tasks are unavoidable. The rigor of these irksome drills and the roughness of this thorny road to knowledge have been softened somewhat by the devices of instruction, by making forms incidental to interesting thought exercises, and by a more systematic organization of the formal elements; but the dictated and arbitrary character of this subject-matter remains much the same.

On the other hand, freedom of thought and an independent attitude of mind toward the content of studies is to be fostered from the beginning of school life. Freedom of action, which we discussed in the preceding chapter on school management, is no more important than freedom to think. An open mind, that looks out upon the world with an unbiased and even critical judgment, expresses the true attitude of the learner. This frank and self-reliant independence of spirit can be cultivated in every study and in nearly every lesson. This kind of freedom means more than the removal of restraints and barriers, so as to let the child loose to disport itself in free play and free thought and action, as Rousseau demanded. The gaining of intellectual and moral freedom is a still higher achievement which a free, self-reliant spirit wins for itself through struggle and self-discipline. Like the knight of old, a Roland or a Launcelot, the young hero, in the freedom of his untried powers, must go out to meet hardship and combat, and win true freedom and self-reliance in his own strength. The school is the place to give a child partial freedom and wider opportunity to gain for himself a still higher kind of freedom. The school purposely sets problems and difficulties, i.e., opportunities, for the child to struggle for the development of self-reliant powers. A hard problem worked out through constructive thinking inspires confidence in one's own resources.

Obedience to required forms and the mastery of dictated material, on the one side, freedom of thought and self-reliant effort on the other, — we may appraise the

value of methods of teaching by their power to develop and to combine these characteristic antithetical qualities. This amounts to a demand for a combined double standard of excellence. When we have once determined what a suitable course of study is, with the selection and organization of materials which constitute it, we shall find that the mastery and assimilation of such a course by boys and girls is based upon a combined dictation and independent-thought method. If at the present moment we should take stock of the methods in vogue in our better schools, we should probably find a strong predominance of dictation methods. If, contrariwise, we should take council of our writers and authorities on the general theory of education, we should find a strong preferential demand for freedom of thought in the instruction of children; so wide apart are theory and practice, and so cock-sure is each party, that it has the truth on its own side. The practitioners, with their dictated work, have the advantage, however, because they are controlling, managing, and teaching the children, while it is doubtful whether the advocates of freedom are holding their own even in their classrooms and with their own students.

On the one side, the forces of conservatism and tradition, which stand squarely for a dictated education, are powerfully intrenched in courses of study, in textbooks, and in long-established habits of the teaching body. On the other side, an instruction that emphasizes independent thought in children, however sound, is out of harmony with prevailing books and methods,

is reformatory and disturbing in its tendencies, and has not yet demonstrated its ability to organize a rational course of study. In fact, the proposal to develop children into freedom and independence of thought, even in a moderate and reasonable degree, sets up a standard which is exceedingly difficult of attainment. Even with a much richer and better organized course of study than we have at present, and with much better trained teachers, the proposed standard would be very high, almost ideal. When we consider that even among well-educated people the faculty for free and independent thought is somewhat unusual and remarkable, and that among teachers only occasionally do we meet that peculiar cast of mind which thinks independently and seems, by some intuitive gift, to awaken the free mental energies of pupils, we may not be surprised to find that the majority of teachers travel on a lower plain and not on the uplands of independent thought.

Yet the problem of harmonizing these opposing tendencies is one we as teachers are called upon to solve. It will remain a problem to our successors to be solved over and over again when we are long forgotten. The practical difficulties of the present situation in the schools we will attempt to discuss somewhat further.

Many earnest and vigorous teachers limit their instruction mainly or entirely to a definitely fixed and organized subject-matter, and to exacting drill methods in reproducing it. Some of the arguments offered for this mode of procedure are as follows: (1) such exer-

cises are excellent mental training and establish good habits of study, attentive concentration, mental grasp, and sustained effort; (2) children are by nature imitative and receptive and not capable of much originality in thinking; (3) they must first acquire the essential elements of every subject by dictation methods before they can possess the materials upon which to exercise their free and independent judgment. The general presumption at the basis of these arguments is that boys and girls do not rise to the stage of self-reliance and independent thought till after they have passed out of the elementary school at the age of fourteen or fifteen.

This conclusion, if true, would deliver our schools into the hands of the drill-master. Memory exercises and repetition drills would dominate instruction as indeed is often the case. On this basis, the course of study and the method of teaching would be laid down within definite and narrow limits. The processes of instruction would be simple, mechanical, and perhaps easy for the teacher.

The main objection to all this from the advocates of freedom is that independence and self-activity in thought are fundamental necessities to a child from the first start into school. This is a basal presupposition on the other side of the controversy. Freedom and rationality in thinking have their beginnings in early child life and require a steady and unbroken cultivation. A free outlook and a fearless, self-reliant spirit in facing the oncoming experiences of life should be

vouchsafed to every child. Such a spirit is cultivated by cheerfully throwing the doors wide open, and not by a narrow, arbitrary dictation which tends by itself to suppress spontaneity and freedom. Good reasons may be assigned why a rigid dictatorial method of learning should not be clamped down upon the spirits of young children. It is like a nipping frost to tender plants. It fails even to get strong attention in primary classrooms, — a first necessity. It furnishes no suitable transition from the free play and spontaneous activities of the period just before entering school. Such dictated exercises lay a heavy burden of voluntary attention upon children at a too early period of their mental development. Such an arbitrary instruction usually pays little regard to a child's natural interests and impulses for action. It leaves out the element of motive except it be the motive of fear. Even young children like to initiate and carry out crude efforts at construction, drawing, and play, and this enterprising spirit should have free scope. Throughout child life each hopeful should be growing in the power of intelligent self-determination, with frequent opportunity and encouragement to self-direction.

This bold theory of self-activity and self-direction in the learning processes of children has been vigorously advocated from age to age by reformers such as Basedow, Rousseau, Froebel, Spencer, Agassiz and John Dewey. It has been also humorously caricatured and ridiculed by generation after generation of schoolmasters. In recent years, it has been applied and worked

out with more or less success by bold and capable teachers who are not afraid to try experiments and to test out theories. Young children are found to learn best when allowed a large measure of self-activity in their studious efforts. Story-telling in primary grades, as well as in the middle grades, with its dramatic scenes, its open discussion and free reproductions, impersonations, etc., lies mainly in the realm of freedom, far removed from standard forms of dictation. In intermediate and grammar grades our chief means of saving instruction from hopeless dullness is the introduction of more liveliness into class instruction by setting up interesting aims for discussion and debate: e.g., Was Jefferson justified in purchasing Louisiana? Who was chiefly responsible for the failure of Burgoyne's expedition? Who was mainly instrumental in the introduction of slavery into the colonies? Why did La Salle fail in his plans?

The recent introduction of more vital topics with richer materials of study in geography, history, and applied science, the greater freedom for working out interesting problems and for collecting source materials, products, pictures, and outside references, have improved instruction. In the upper grades, no kind of spontaneous interest and self-activity is quite equal to that offered by a somewhat free range of discussion in developing an important idea which progressively organizes rich materials of thought in a large topic. Under their own impulses of thought the topic keeps developing into wider views and to sharper insight into broad

world relations. The Erie Canal, and later the Panama Canal, as shown up in their extensive national and world connections, grow steadily in interest, and in comprehensiveness, and in demonstrated practical thought value.

The outcome of our discussion so far, in our effort to present both sides of the argument, is a manifest dualism. There is a marked tendency to fall into argument and controversy, to maintain one side against the other. But our problem is not simple enough to be settled by a conclusive argument on one side or the other. Its solution calls for a larger conception which accommodates the principle of freedom, first, to the nature and organization of subject-matter in studies, and second, to the process by which a child gradually develops into more of freedom and of self-determination.

The value of a plan or method of teaching subjects may be judged in large part by its tendency to combine these two modes of instruction, namely, dictation and independent thought. Or its defect may lie in emphasizing one to the neglect of the other. Our long-prevailing textbook method, for example, may be judged by its effect in cultivating freedom of thought or conformity to dictated subject-matter. Much, of course, will depend on the teacher, his method of assigning lessons, his way of using the book in the class, the quality of his questions and tests, and his tendency to discuss and illustrate the content of the book. Speaking, however, in general terms, a textbook treatment of a topic

may be described as a pronounced dictation method, because it prescribes with full authority the content and form of the lesson which is to be appropriated by memory and reason. If a child does much independent thinking in learning a textbook lesson, he may get into trouble, and, what is more serious, he may get the teacher into trouble.

It has been commonly assumed by our teachers that a child, left to himself to master a lesson from a book, is cultivating self-activity and self-reliance in thinking. The teacher sets him off by himself to learn his lesson by his own effort. But memorizing such dictated lessons is no sure proof that a child is exercising independent powers of thought. His real independence is often shown by the way in which he manages to dodge the requirement. If he does submit his will to the teacher and learns his lesson, he is very apt to do it by a habit of more or less thoughtless memorizing of words and phrases. There is no certainty that he understands what he learns from a book. Often it is easier to memorize than to understand a passage, for our textbooks, unfortunately, contain many vague generalities which are not easily understood by the average mind. Another criticism of our textbooks, as commonly used, is that they give neither teacher nor pupil any experience in the original organization of material, and not much encouragement to judge independently the relative worth of the author's facts or statements. The natural tendency, therefore, of textbook instruction is toward conformity and not toward independency in thinking.

In many cases, dependence upon the book is complete, and what we may call the worship of the book becomes an unconscious habit. A textbook is a great help to a poorly equipped teacher, but it may become a cramping limitation to a strong, capable teacher. If the teacher could regard the textbook as a useful outline, which it often is, to be modified at will, enlarged at important centers of thought, contracted or omitted at other points, open to free criticism because of faulty arrangement or defect in method, to be examined or even pulled to pieces to discover its real merits, it might, in the hands of such an active-minded teacher, become the basis of a combination method which would develop the sound knowledge and thinking powers of children. A textbook used by a thoughtful teacher may be made the ground of a much broader treatment of the subject involving free discussion of other points of view, criticism, and individual judgment.

There are certain serious and unavoidable defects in our textbooks which can be compensated for only by having a teacher who is much larger than the book.

(1) The book cannot give an adequate treatment of the important topics. The enlargement of topics at such central points must fall to the teacher.

(2) The book cannot easily set up problems and give the fit suggestion to their progressive, independent working-out. The teacher can do this through discussion and assignment.

(3) The reflective tracing-out of the relations in which a central topic stands to other topics, gained

through causal connection, comparisons based on likeness and contrast, and other forms of association, — this considerate balancing up and organizing of thought material can be done very inadequately in a textbook treatment. A versatile, thoughtful, and ingenious teacher can bring these things to pass in a classroom.

We cannot fail to observe, however, that these defects appear at those very points where freedom and independence of judgment are most in demand. The average use of textbooks means the acceptance of knowledge on authority with but slight effort to train children to freedom of judgment.

The great merit of textbooks, on the other hand, as used by good instructors, lies in the fact that regular daily tasks can be assigned, demanding strong, studious effort, throwing complete responsibility upon the pupils and furnishing a good basis of knowledge upon which discussion and amplification of the subject can be made in the class period. A teacher who knows how to open up a textbook lesson by a good assignment, who not only gives vigorous tests for the mastery of the assigned lesson, but can enlarge and enrich the whole topic by illustrations, by comparisons, and the discussion of problems involved, may thus combine the content of the text with a strong stimulation to independent thought. An illustration of this mode of treatment is attempted at the close of this chapter in connection with Burgoyne's invasion.

A lecture method, such as is used in higher schools

and colleges, when tested by our combined double standard of efficiency, is found to have faults that are not easily remedied. A lecture may be interesting or dull: in either case it is a dictation. The readings that run parallel with the lectures may offer a good student opportunity for independent study. The real problem for the teacher and student, however, is that of learning how to organize and simplify miscellaneous and scattered source materials. The usual tests for college lectures and readings will do little to train students into these superior habits of organization. But just at this point lies the possibility for training students into originality and balanced judgment in thinking. The usual college tests of knowledge are confined mainly to memory reproductions and to reasoning within somewhat narrow limits of assigned or dictated material. Graduate work, with its original themes and investigations, offers much better training of independent powers after a college course is completed.

Laboratory methods in the physical and biological sciences are designed to set problems to test the resourcefulness and self-dependence of students in working out solutions. But the achievement of such independence of thought, even in science study, is not an easily secured result. The laboratories must be directed by thoughtful and resourceful teachers just as in other studies. In the same way, the industrial arts, with their constructive problems, were supposed to promote free activity and self-directed effort in planning and executing projects. But under a mechanical teacher,

the manual arts drop back into routine processes and blue-print dictations of problems as formal and arbitrary as any lessons in spelling, writing, or grammar. We are forced back to the conclusion that it requires a vital and original teacher to awaken originality and versatility of resource in pupils.

An oral-and-development method of instruction has been growing up in primary and intermediate grades, and in departmental work of grammar schools, which has in it some of the elements of power, combined with weaknesses that ought to be eliminated. An oral method of instruction calls for distinct mastery and control of subject-matter by the teacher, and it allows greater flexibility of treatment with discussion, question, criticism, and the setting of problems. Successful oral instruction imposes upon the teacher, at the start, several high-grade qualifications: (1) a complete and transparent organization of the subject-matter that sets main features into prominence and groups the secondary facts and illustrations around these central points; (2) quickness in interpreting the past experiences, the ideas and feelings of children; (3) discriminating skill in formulating and adapting questions; (4) clearness in narrative and dramatic presentation, board-sketching, etc.; (5) versatility and breadth in managing discussion so as to hold to the main line of argument while allowing some degree of freedom to digress.

Another point, which is coming more and more into view as our methods of oral instruction develop and

improve, is the problem-setting idea as a means of securing stronger, more independent thought. We are familiar with the problem in arithmetic and in higher mathematics as a means of forcing some degree of original, constructive thinking. The science laboratory and shop-work in the arts also furnish good problems, so far as the teacher is wise in selecting and using them. As history and geography are brought down close to man's needs and conditions, in the past and present, nearly every topic in these subjects becomes a vital problem, a struggle with given conditions to achieve certain valuable results. The Civil War was a mighty problem for Lincoln. Bismarck's masterly heroic struggle for the unification of Germany was his absorbing problem, the mainspring of his actions. The old National Road was a statesman's problem. Fulton's life was spent in heroic and successful efforts to solve a difficulty in steam navigation. Men and nations have been and are at work solving problems, and boys and girls in school should get at these questions as soon as they have the brain power to understand and appreciate their meaning.

The problem-working idea, however, followed back to its source, is much more than a useful device of method for stimulating the best kind of thinking, valuable as it may be to that end. The big topics, which, when arranged into a series, constitute the backbone of the course of study in any branch of knowledge, may be best stated in the form of problems. In each of the large units of study into which our curriculum is

being resolved, for the purpose of simpler organization, is a central dominant idea. The demonstration and later working-out of this idea is the problem of this unit of study. Such ideas are usually worked out in the face of difficulties, obstructions, and complications. In fact, such an idea usually grows and develops through a series of minor problems which are the logical steps in its unfolding. The idea, for example, of the Panama Canal has thus developed in history through such a series of obstacles. One by one, the problems have been mastered and the result aimed at, the content of the idea, has now been realized. In the future, it will go on working its effects. The idea of utilizing the power of steam for man's uses in the industries, commerce, etc., has gone on developing from one problem to another through stationary engines, locomotives, ship-propelling engines, etc., till it has transformed the world. Electrical power has taken a similar course through problems. The Columbus idea, the railroad idea, the cotton-producing and manufacturing idea, the Federal Government or Union idea, the public school idea, — the world of human interests has been organizing itself along the lines which these and a few other great ideas have laid out in their progressive development. The schoolmaster should seize upon these basal ideas upon which our national, social, and industrial life has been organizing itself, and make them the main lines of movement in the thought work of children. Especially so, because every one of these ideas has worked itself out concretely and dramati-

cally through a succession of problems, — bold, enterprising, often heroic problems, which appeal to the imagination and intelligence of children. The great man, the inventor, the discoverer, the philanthropist, the real statesman, is the problem-solver, the man who can break through difficulties and obstructions and lead his party to success in a new and higher realization of some aggressive idea. In this way the school follows in the footsteps of life and leads out of the past directly into the problems of the present.

At this point we reach the culmination of our argument in favor of free, self-reliant thinking. Such independence of thought is not to be had for the asking, but only under the most favorable conditions, a wisely organized course of study, and sagacious teachers. The development of children toward independency in thinking is a knotty point for the teacher. An unusual degree of shrewdness and ingenuity is required for setting children's minds to working independently. Unbiased reflection and self-examination may surprise the teacher with the discovery that his whole method has been dictatorial, although he may have been actively preaching the doctrine of self-activity. It is difficult to throw children into the water and to force them to swim for themselves — without drowning. In other words, stimulating children to self-activity in thought is a high art. It is a process not easy of formulation, if it can be formulated at all. The mother bird is said to push the fledgling out of the nest to get it to try its wings. In the nature of the case, it is difficult

to make rules for crossing the boundary into the land of freedom, more than to say, "Get up and go." Yet we must keep pushing children over this boundary line and watching their struggles on the other side.

Such a vigorous practical thinker as George Kerschensteiner, of Munich, seems to despair of getting independent effort or self-activity in thinking through the systematic instruction of the German *Volkschule*. Yet the *Volkschule* is considered by many the best in the world, in our time, in point of training and experience of its teachers, and in the organization of its course of study. Our problem, therefore, is not an easy one. The demand for growing freedom and independence of thought is too strong to be rejected or set aside. It lies in the normal direction of the development of human nature during the period of childhood and youth. But the road to freedom in thinking is a difficult one to travel, and it is still more difficult to direct others into it. It is, indeed, one of the greatest achievements in the world of mind, and such things are never gained without serious effort.

Again, this road to freedom lies through a rigorous training in the dictated materials of knowledge organized into an established course of study. The dictated materials of thought are to be so handled that freedom to think shall find constantly an open door by which to emerge into a larger world. The teacher should keep these two things in mind and bring them into coöperation.

Such advice is necessary, for the schoolmaster natu-

rally grows into a dictatorial attitude in teaching. This is emphasized by the fact that originality of thought and expression are often, perhaps, unconsciously discouraged by teachers. We have frequently heard children reproved by teachers for giving a bright, original answer because the teacher was not looking for an original answer and did not recognize it when offered. Not seldom the child's apt reply to a teacher's question is positively rejected because the teacher has a stereotyped phrase in mind and is satisfied with nothing else. In some cases the child's answer may be wholly original and more appropriate to the case. In a second-grade class the teacher was asking the children why we liked to see the rain in spring-time. One practical little girl replied, in all sincerity, "Because the girls can catch rain-water so they can wash their hair." But the teacher was not quick enough to accept this answer in good faith.

Again, certain easy and natural objections may be offered against cultivating a marked freedom of thought in ordinary schoolrooms. The spirit of freedom, as it manifests itself in young people, is not always agreeable. It is noisy and creates possible disturbance and disorder. It upsets the established routine of conventional thinking and acting. The teacher, if not an intellectual boss, is at least usually conservative and holds to trodden paths. His chief function is to conserve and hand down the best culture of the past rather than to quicken independent thought. Culture, in the main, takes on established forms, in literature even an artis-

tic and highly polished form. Even science has been reduced to principles and laws definitely organized and brought to exact statement.

But freedom of thought, in an almost exaggerated form, is a birthright of American children. They have already entered upon this right and there is not much prospect of curtailing it. The real freedom toward which children should be trained is the freedom that comes from thinking out and knowing the truth, the freedom to acquire, not narrow and one-sided views or prejudices, but rather complete and balanced judgments, which take in the important phases of a subject and understand it in its essential bearings. The schools can do more than any other agency, by cultivating balanced modes of thinking, to head off wild and reckless schemes of liberty, so as to make freedom rational and sensible.

From this point of view, teachers should be highly liberal and progressive with a strong conservative bias, so as to lead children constantly and steadily into larger and safer courses of thought.

The following discussion of Burgoyne's campaign may suggest some of the problems of that interesting undertaking, which may give the children a chance to study the situation more broadly, weigh the evidence, and form their own independent judgments: —

BURGOYNE'S CAMPAIGN

Burgoyne's campaign and its results offer a series of lively problems for class discussion. Presupposing that the class is following the usual textbook treatment of this topic, its im-

portance would warrant an enlargement of the class discussion, involving additional reference materials, maps, etc. For the use of the teacher and as special reference work for individual children in grammar grades, the following books are suggested: Fiske's small volume on *The War of Independence*, chapter VI; also, vol. I of Fiske's *American Revolution*, last two chapters; S. A. Drake's *Burgoyne's Invasion of 1777*, an excellent little book devoted to this campaign; Sloane's *French War and the Revolution*, chapters XXII, XXIII.

Outline of points

1. Burgoyne's plan.
2. Find out the reasons why Burgoyne's remarkable success in the first stage of his campaign was soon changed into a series of disasters.
3. Disposition and character of British generals: failure to coöperate.
4. Quarrels among American generals: coöperation.
5. Results of Burgoyne's campaign and surrender.
6. Burgoyne's campaign compared with Cornwallis's campaign and surrender at Yorktown.

1. Burgoyne's plan.

The general plan of the British campaign for getting possession of New York along the line of Lake Champlain and the Hudson was discussed the preceding winter in London by Burgoyne, in conference with the Cabinet and military authorities in England, including Sir George Germaine and the king. Burgoyne had been with the English army fighting in America and was able to convince the king and his counselors that he had a shrewd plan for ending the war.

Observe more closely, by studying the map, what this plan was. Three British armies were to move from three directions toward Albany and combine their forces. Burgoyne, with a strong and finely equipped army, was to move up Lake Champlain, Lord Howe with a still more powerful force (he had 30,000 men at New York) was to move up the Hudson, and St. Leger with a strong force of British, Canadians, and Indians was to march from Oswego to Fort Stanwix and down the Mohawk. The Tories, under the lead of Sir John

Johnson and the Iroquois Indians, were supporting the English. Sir Guy Carleton remained in Canada to aid Burgoyne with supplies and reinforcements from that quarter. In order to make the campaign successful for the British, three different commanders, widely separated and unable to communicate easily with each other, must move promptly toward a central point near Albany.

There were, besides the three strong armies, certain other less positive advantages that Burgoyne reckoned on. Five hundred Indians and a force of Canadian militia joined his army in moving up Lake Champlain. The large number of Tories in the Mohawk Valley and in central New York would render him material aid. Along the borders of Vermont and Massachusetts, he expected that a large number of Tories would flock to his standard, bringing provisions and fighting strength. In fact, Burgoyne and the British leaders thought there were so many Tories and friends of England on their line of march that they would be, as it were, traveling through a friendly country. Again, Burgoyne felt that the overwhelming military forces which were brought into the field by the English would break down all opposition and cause a scattering among the Americans. What prospect was there now that Burgoyne, as the central figure in the campaign, could bring all these forces into coöperation so as to win a final success?

But all these things made up only half of Burgoyne's problem. What was the situation with the Americans and their armies? What were they likely to do? St. Clair had a force of two or three thousand at Ticonderoga. General Schuyler had a small army at Fort Edward. The forts of the Hudson were held by the American troops. Washington had an army in New Jersey watching Howe at New York. Possibly Washington might keep Howe busy so that he would fail to send a strong force to aid Burgoyne. What would the New England militia do when they saw Burgoyne's army moving down toward Albany, e.g., Stark and the Green Mountain boys? Even in the Mohawk Valley there were German and other patriots who might give aid in the defense of Fort Stanwix. Even a part of the Iroquois tribes were friendly to the Americans. Possibly the American people as a whole were far more in earnest in repelling an invading army than Burgoyne and

his friends supposed. The Americans, too, were well acquainted with the rough wilderness through which the British army was to march. The English were not.

It was an easy thing for Burgoyne to show in a British drawing-room how this campaign could be worked out on paper, but when his army got into the woods and swamps between Lake Champlain and Fort Edward, would it work out so easily? Burgoyne's campaign was a problem of unusual complexity and showed up various unforeseen difficulties that arise in an extended series of military operations.

2. As Burgoyne's splendidly equipped army came sweeping up Lake Champlain it carried everything before it; captured Ticonderoga, and scattered the American forces in several directions. This was followed by a series of equally remarkable reverses.

What mistakes did Burgoyne make following the capture of Ticonderoga? Could he have avoided these mistakes? Was Burgoyne responsible for the defeat at Bennington? At Fort Stanwix? Did the Indian allies of Burgoyne prove of any assistance or advantage to him? Why? After Lincoln came in behind Burgoyne's army and broke up his communications and cut off his supplies, can you think of any way by which Burgoyne could have saved his army?

If Sir William Howe, with a powerful army, had moved promptly up the Hudson, could he have saved Burgoyne's army from destruction? Show in what ways and to what extent Washington was responsible for the final defeat and capture of Burgoyne's army. In how many directions had Burgoyne's expectations been disappointed and his combinations broken up?

3. An extensive campaign like that of Burgoyne furnishes a remarkable study of human nature as exhibited by the generals.

Burgoyne's defeat and surrender were made a matter of investigation by the British Parliament. The British Cabinet tried to throw the blame for the defeat upon Burgoyne, but an inquiry in the House of Commons brought out the fact that Lord George Germaine, at the head of the British War Office in England, had failed to send the positive order to General Howe to move up the Hudson to aid Burgoyne. So, being left to his own judgment, Howe sailed away to the

Chesapeake and thus made it impossible for him to give aid to Burgoyne at the critical moment. Sir Guy Carleton, who commanded the British forces in Canada, failed to send troops to man Ticonderoga, so that Burgoyne was compelled to detach a thousand of his own army to hold that place. St. Leger's expedition was a disastrous failure, as was also the movement against Bennington. The Indians also deserted him. The British plan for coöperation had broken down at every point, because of lack of definite orders or of inefficiency or jealousy of the commanders. How would you distribute the blame for the failure of Burgoyne's campaign?

4. Mistakes and quarrels among the American generals. Stark, having refused to obey the orders of General Schuyler, planned the battle of Bennington according to his own notion, and won a brilliant success. Congress had blundered in appointing Gates, a poor general, to succeed Schuyler, a good one. Arnold quarreled with Gates, and plunged into the battle of Saratoga contrary to the wishes of his superior. But in spite of these disagreements the American generals had coöperated successfully in every important movement. Washington, although at a great distance from the scene of action, and confronted by an army twice as large as his own, had greatly aided the other American generals, not only with advice and the influence of his authority, but also with some of his best generals and troops. He sent Arnold and the daring Morgan with five hundred picked men. It may be said that at nearly every point, while the British generals had blundered and failed to coöperate, the American generals, on the contrary, had shown skill and good judgment and coöperation.

5. Observe more closely the somewhat unexpected results that followed from the capture of the British army by the Americans. The Americans were naturally jubilant. They had demonstrated their power to do great things. Even the militia could fight or whip veterans, whether from Germany or England. It raised the spirit of the young nation and made the people confident that they could win independence. What was the reception of this news in England? Parliament met in profound gloom. The leader of the Tory party, Lord North, turned a complete political somersault in full view of the world, introducing a bill to grant all demands originally

made by the Americans, and giving up forever the right of Parliament to tax the Americans. France had been watching and waiting to see what America could do single-handed against the power of England. Franklin, our shrewd diplomat, did not fail to take advantage of this situation. What other motives influenced France to join with America in a close league of friendship at this time? War was declared between France and England. Spain soon followed France, and Holland was drawn in later. What would naturally be the outcome of this powerful combination of European states against England? Even Prussia and Russia showed an unfriendly attitude toward England, and refused to allow German troops to be sent to America.

Why should a battle between small armies in the backwoods of America produce such far-reaching influence upon the politics of the great nations of the world?

6. Burgoyne's campaign, in several important features, may be brought into comparison, later in the history study, with the second great military campaign of the Revolution, ending in Cornwallis's surrender and the virtual conclusion of the war.

At the beginning of this campaign how does the battle of Camden resemble Burgoyne's capture of Ticonderoga? What striking similarity is there between the battle of King's Mountain and the battle of Bennington? The battle of Cowpens was also a reverse for Cornwallis that upset his plans.

It is a curious fact that Gates, the victor at Saratoga, suffered at Camden the worst defeat in the Southern campaign, changing, they said, his Northern laurels into Southern willows.

In what respects do the events leading to the surrender of Cornwallis at Yorktown resemble the events of Burgoyne's campaign and surrender?

Cornwallis moved down to the coast at Yorktown to coöperate with the British fleet and to secure aid from New York. Washington, on the other hand, by a wide-reaching combination of his own army with the French troops under Rochambeau, with the French fleet under De Grasse and with Lafayette's army in Virginia, all brought together at one time, to the surprise of his enemies cooped up the British army at

Yorktown and forced its surrender. The English had tried to make a combination and failed. Washington, by coöperating successfully with widely separated forces, brought the war to an end. In fact, this ability of Washington to work out successfully this grand scheme of coöperation of widely separated forces marks his special genius as a commander.

In both of the great campaigns of the Revolution, therefore, final and overwhelming success was won by the Americans through coöperation, and disaster fell upon British arms because of their failure to coöperate.

A comparison of these campaigns on the basis of the study of the maps, showing the location and movements of armies, the effects of battles, and the coöperating plans, enables the children to form their own judgments of the campaigns and their leaders.

CHAPTER V

HOW TO GET SELF-ACTIVITY AND INITIATIVE

INDEPENDENT thinking and self-reliant effort are set forth, in the preceding chapter, as first-class achievements in study. So important are these qualities in the student that we must hunt out the means of achieving them. An analysis and discussion of two other forms of contradiction may put into our hands just the means we require for developing these superior mental qualities. The first falls under the heading, "Help and Self-Help," the second has the title, "Interest and Effort."

I. HELP AND SELF-HELP

It is usually regarded as the peculiar function of the teacher to help children in their immature efforts at learning. Older pupils, and even adults who keep up their studies, require guidance and assistance in their thinking. As a little child, learning to walk, needs the encouragement and timely help of parents, so it is, more or less, with all classes of pupils in their studies. Otherwise, we could dispense with the costly luxury of the teacher. Every day, in the school, children are coming face to face with new and untried problems, things they have not studied before. The school intentionally puts these difficulties in their path day by day, and then leads them to the attack. But textbooks are not so carefully graded that children can be left to their

own resources in their use. In the assignment of the lesson the teacher will foresee the difficulty and give special direction to effort. In a sixth-grade reading-lesson on Rip Van Winkle, he may put a list of the unusual words on the blackboard and give a preliminary drill on their pronunciation and meaning. The awkward and blundering attempts of children can be forestalled and their energy poured into right channels. Misdirected effort in children produces discouragement and friction and leads to a feeling of antagonism and repulsion to studies. Slow pupils, and even smart ones, become discouraged and moody. A teacher of unusual mental strength and versatility remarked to me that, as a boy in school, he was completely discouraged by being plunged into a subject that was too difficult, and he considered seriously the abandonment of his studies. It is the business of the teacher to prevent these depressing situations, to keep up the spirit of children by throwing light upon the road to be traversed.

Strewn all along the pathway of the school course are children who do not know how to study. They have mental strength, but they know not how to use it. They have not, in some cases, learned how to pay attention, how to concentrate their mental energy. Much less have they learned how to see relations, to help themselves by mental devices, to think. Much time is wasted by letting them flounder in their awkward, helpless ways. The teacher should be an expert in preventing and curing mental awkwardness. Many children are mental stutterers. They require a kindly,

helpful, patient teacher to relieve their nervous strain and set their thought free. Socrates claimed that he could not teach people anything directly: he was only a helper: he could assist them in avoiding mistakes, in escaping pitfalls: he was only a more thoughtful and prudent guide to his disciples. By means of keen questions, illustrations, supposed arguments, and cutting irony, he could put people's thoughts into motion. His chief function, it seems, was to get people to use their minds, to stand alone, and, little by little, to walk mentally on their own feet. Such was his success in his own peculiar process of helping people to learn how to think that he stands almost without a parallel among teachers.

The willingness to be helpful to children expresses the true spirit and quality of the teacher. It is the natural parental attitude toward those who need sympathy and guidance. In the long pathway from infancy through childhood and youth to maturity, a child should be well guided, he should be mentally and morally well nurtured. This is a work of kindly, intelligent devotion to others. To be wisely helpful to children as they grow is to confer upon them unselfishly the best gifts that human beings may bestow. Teachers like Pestalozzi, David Livingstone, Arnold of Rugby, Froebel, Vittorino da Feltre, and Paul the Apostle represent this highest kind of service. It involves far more than intellectual training. Especially in their moral growth, children halt and stumble. They need friendly and helpful guidance. A kind-hearted sympathy and

even parental solicitude are alone adequate to supply the necessities of human nature as it struggles forward.

On the other hand, some of our wise, oracular friends tell us that we help children too much. Like young mothers with their infants, we are over-eager and too solicitous to run to their aid. They do not need our help. They are much better off without it. They would better stand alone, or, if need be, fall, rather than depend so much upon support. We stand close behind and bolster them up so constantly in their trials that they lose the power of self-help. They are being helped into helplessness, as Colonel Parker used to say. We grade up the valleys and we level down the hills till there are no steep grades to climb. Our textbooks are graded with painstaking care. The skillful teacher moves in between the textbook lessons and smooths out the intervening rough places. To complete the process of helping, the parents at home work out the problems for the children (sometimes, fortunately, in the wrong way). This over-helpful spirit easily runs to extremes. The more progressive and up-to-date the school, the more experienced and high-priced the teacher, the more complete the equipment, the more danger, perhaps, that children will lose in self-reliance, in native, independent strength. We should always be on our guard against helping too much. In some of our so-called best schools, we have such a coddling tenderness for even older children that their mental anatomy becomes soft and flabby. A strapping boy of fourteen cannot work the simplest problem in percentage with-

out help. He is seized with a fit of the "can'ts." A point-blank refusal on the part of the teacher to help such a boy is the best medicine in the whole knapsack. Such luckless boys and girls require to be jolted. They need a curry-comb rather than a soft sponge. The old log schoolhouse, with the older boys sitting outdoors on a log working out their sums without help or interference from the teacher, is much better than our over-helpful contrivances. We have n't any good use for mental mollycoddles.

How shall children be trained to meet difficulties, relying upon their own resources? Not by perpetual help, but by a perpetual avoidance, if possible, of giving needless help. Every study, well arranged, should supply a series of problems, so ordered that a child of normal ability can work them out with little help. Let not the teacher spoil this well-arranged program by intruding his kind offices at every point. The children themselves should be trained to resent this kind of help. They should take pride in helping themselves. Such injudicious helping is a blunder that spoils "the best laid schemes o' mice and men." When a teacher is bent on this sort of mischief there is no remedy for it except to get another and better teacher.

A nine-year-old girl had acquired this habit of dependence. She and the teacher were close friends. The latter was always at hand to help the girl in her difficulties. Soon it was observed that in class instruction the girl copied her problems from other children at the board. She was developing a decided deficiency in

arithmetic, not from lack of ability, but from too much help. Under another teacher she overcame this weakness and developed self-reliance. In such cases the teacher should not be too friendly and accommodating. He should withdraw his favors and keep aloof. It is his function, as much as possible, to make himself unnecessary, to encourage and even require children to do their own tasks, with as little assistance as may be. Not how much can the teacher help, but how much can the children do without help, is the important question.

The teacher with his abundant knowledge and interest in the subject is tempted to pour out his information liberally and show up its important relations and meanings. Students also enjoy such a feast and respond to the enthusiasm and enlarged views of a wide-awake teacher. Such interesting episodes in class instruction are extremely valuable in keeping up the class spirit and in maintaining a strong interest. But the zeal of the instructor for exploiting his own views should not monopolize the class period to such a degree that students lose the opportunity for full and adequate expression of their ideas in mastering and organizing the materials. Nothing can take the place of the student's own independent effort to comprehend and fitly express the content of the lesson. The more this obligation is thrown back upon him, the more he accomplishes it by his own unaided resources, the more valuable are the results. This doctrine of self-help applies to all sorts of studies and to many phases of instruction. In the very first primary grade, we have some of the strong demon-

strations of this spirit of self-reliance, this willingness to plunge into a task to master it in full confidence in one's own power. This occurs, for example, in the phonic interpretation of new words in reading-lessons. As we advance in the grades, this confident self-reliance should steadily increase, so that boys and girls grow more resolute in meeting their later tasks and difficulties. The failure to accomplish this is itself a severe criticism of our system.

From what has been said before about the teacher as a helper, we hardly need to affirm that this principle of self-help, alone, is wholly inadequate to govern the teacher's method. He who simply makes a flat refusal to help children in their difficulties and struggles is too crude and undiscriminating to serve as a teacher.

We have, then, two evenly balanced, almost contradictory statements as follows: (1) The teacher is in his very function and nature an ever-present helper. (2) The true teacher is ever on the alert to avoid giving help. He is perpetually seeking means of throwing the burden of effort back upon the pupil. Can a thoughtful mind reconcile these statements not merely in theory, but also in school practice? Can we find a middle ground between those who help all the time and those who systematically refuse to help? To strike this middle line between too much and too little requires a ripened tact and wisdom in the instructor. It is quite easy to say, "I am always ready to help"; and some teachers are naturally so inclined. It is equally easy to say, "I refuse to help you at all"; and some teachers

naturally feel and act in this spirit. But it is the finest test of the teacher's quality to judge wisely and to help only here and there at the moment of real need.

It is implied in the above treatment that teachers naturally incline to one side or the other of this dilemma; that they are, by temperament, either too willing to help children or too abrupt in refusing help. If so, each teacher must solve this problem for himself. In order to secure a proper balance, he must deliberately throw more weight on one side of the scale. He must temper his zeal on one side and put more strength into the other. He will have to make himself over so as to become a good schoolmaster.

We may illustrate by examples how the teacher is to balance up the account. In the application of principles already learned, we usually say that it is a mark of poor judgment in a teacher to work out a problem for a pupil. First see to it that the facts and conditions of the problem are made clear: then throw the burden of thought back upon the pupil. If it is a question as to the difference in longitude between two places, a diagram or map may be necessary to cause the facts to stand out clearly: then let the child work it out, but abstain from doing this part of his thinking for him. It is the business of teachers to get the material of knowledge before a child in such a form and order that it measures up to his ability: then turn his thought loose upon it to work independently. The teacher should cultivate a deliberate and thoughtful attitude, a constant watchfulness and circumspection, which fits his

treatment into each child's needs. One child requires help at a point where another would be damaged by it. The study period is a good time to learn to help children properly, because one can deal with them individually according to personal qualities and needs.

This is the peculiar difficulty which the teacher must master for himself — how to draw this fine line of demarcation between too much and too little. We need the rigor of a simple age in our schools. It is to be presupposed that children have brain-power and the classroom is the place to touch off this energy by suggestion. Self-reliance, the power and the habit of helping one's self, is the essential thing, and the teacher is a means for realizing, not for thwarting, this result. This conclusion brings us back to our starting-point at the beginning of this chapter, to the notion of independent thought.

Permissible and effective ways of helping children

1. One of the means of helping and encouraging children in their tasks is almost unconsciously brought about by a free and ready use, by the teacher himself, of the very exercises and modes of expression for which the children are held responsible. For example, if the teacher writes well and easily on the blackboard, the children admire it and almost unconsciously adopt his style. If the teacher sketches maps and diagrams on the blackboard with manifest success in illustrating topics in geography, his easy use of drawing as a natural means of expression is adopted and practiced by

the children. If a teacher occasionally reads well a telling passage in the literature lesson, it stirs the feelings and sets the pace for the children. Likewise artistic drawing, singing, clear and distinct speaking work their natural effects. Everything, almost, that the teacher does well and naturally is a helpful guide and stimulus. It aids and encourages children over many hard places.

2. By insisting on a complete mastery of the elementary facts and ideas in any study, the teacher can smooth the way through numerous hardships and difficult problems in later study. Thus the elementary facts in the number tables, factoring, and the aliquot parts, if fully mastered, will ease the work through all the grades and through life. Likewise, an absolute mastery of inflections, paradigms, and vocabularies in the first year's Latin will give smooth sailing during the following years. Let the teacher use all his skill and influence in getting a complete mastery of the basal elements of every study.

3. In the first elementary treatment of any topic the use of simple, clear, concrete illustrations, which give positive demonstration to the new ideas, furnishes a sound basis for future study. For example, pictures and diagrams to show how a canal lock is operated; a diagram showing the main shaft and galleries of a gold mine; a full description, with maps, drawings, and pictures, of an irrigation project, like the Salt River project in Arizona; a series of clear, illustrative sentences showing the use of adverbial clauses in grammar.

4. When certain tasks are assigned, such as a map-drawing, a composition, or a construction in wood, we may point out and warn against definite mistakes that are likely to be made; such mistakes, for example, as were made in a similar previous lesson. While the work is in progress, they should be criticized on just these points so as to generate the right habit.

5. Children are much encouraged by receiving discriminating approval of their honest effort and of their progress and success. Their success, however, should be judged according to their individual ability and effort. Sometimes it is a great encouragement to children to have some of their faults overlooked. If they are trying hard and are making progress in the essentials, they should be freely encouraged.

6. In trying to master difficult or complicated topics, children should be shown how to pick out the main issues, how to discriminate between a few strong centers of thought and the numerous subordinate facts and details. In the assignment of a textbook lesson the instructor may take up one paragraph after another and lead the children to see that a short phrase or sentence expresses the gist of each important section or paragraph. He may also glance through these successive headings and reveal a simple organization of the whole subject. Children are naturally weak in this power to clarify and organize materials in a complex subject. This is one way of teaching them how to study, how to think, how to economize time in study, i.e., by picking out essentials and then mastering them.

7. One important means of increasing the self-reliance of children is to be constantly throwing responsibility upon them for doing well the things they can do. Require them, for example, to give full and adequate statements of topics that have been clearly presented and understood. Encourage them to sketch and draw freely at the blackboard as a means of expression. Push them into dramatization. We need to show real leadership and tact in getting them to take ventures, to plunge in, to participate freely in all that is going on. To inspire them with courage is an important thing.

8. In taking up new subjects of study, as in the first year of the high school, teachers should devise new and interesting modes of approach. Now subjects often seem so obscure and inscrutable that children are completely discouraged before they have a chance to find out what they can do. Latin, at first, seems so strange and foreign to many children that they are defeated before their powers are brought into action. Psychology in normal schools is often a bugbear because it is so strange that students become homesick for something familiar. Map-drawing and composition, when demanded from children without helpful introduction and suggestion, cause too much of fretful anxiety and worry. In composition, especially, there is necessity for suggesting interesting topics and modes of treatment, with examples. See that children are supplied with sources of information, and with some outline or plan of treatment. Teachers forget that children may waste much time and energy in useless worrying.

9. We can help and strengthen children in their basal lines of thought by steadily requiring them to make use and application of what they have learned in previous years and in other studies. The treasures of a child's past experiences and acquired knowledge should be perpetually drawn upon in new lessons. Keep children constantly looking back to their previous lessons for help in their difficulties. Arithmetic is underlaid with certain simple facts and processes which run through the entire course. To keep up this continuity of processes through the whole of arithmetic, by daily association of lessons with past work, gives a sound mastery and teaches children how to make confident use of their knowledge and ability. Comparisons of later geographical topics (in Europe) with previous similar topics (on America) bring out very significant ideas and also organize a child's increasing stores into logical and rational series and groupings. Geography and history are so interdependent that their topics require the tracing-out of numerous lines of association throughout the course of study. Children are slow to make these important thought connections unless the teacher is perpetually alert to require it. This is a higher phase of independent thinking into which children can be led gradually.

10. In some cases it is necessary to overcome the acquired and settled prejudices of children against certain studies. These hostile feelings spring from several sources — from a child's own failures or discouragements, from home opinions and criticisms, from

prevailing sentiments among school children and in the community. It may be advisable to have a free and friendly talk with a grammar-grade class on this question. Why is it worth while to study grammar? In such a discussion narrowness and dogmatism on the teacher's part are out of place. Give practical illustrations of what a business man requires in his own correspondence. How much knowledge of grammar does a typewriter need? Illustrate how grammar aids in correcting our own mistakes. Admit that there are many distinctions in grammar that are of little or no practical use. Tell the story of Lincoln's experience in securing a grammar after considerable difficulty and his careful study of it. Later he became very proficient in the use of language.

11. One of the best proofs that children are doing self-reliant, independent thinking is seen in the thoughtful questions they ask when once interested in a growing subject. In the progressive development of a valuable idea the children are often aroused to vigorous, self-active inquiry. This is a critical time for the teacher. Does she know how to deal with these lively questions as they come pouring in? Too much haste in answering them would check and weaken the thought movement. Guide them forward toward the main goal, but let them think it out for themselves. Suggest other facts and considerations which they have left out of mind. To guide such a discussion with skill is the mark of a prudent instruction. I have lately heard several such lively discussions in classes where the teacher

failed to guide the arguments and to organize the results. In order to handle such a situation the teacher must have a full knowledge and a clear organization so as to see quickly where to place a question, and what it leads to. There are, then, two stages in such thought exercises: first, the awakening of children to active discussion and questioning; second, reinforcing and guiding this thought energy toward valuable conclusions.

Wrong ways of helping children

1. In some cases the teacher's kindness of heart prompts her to recite the lesson for the child if the latter fails. "What is the capital of Illinois?" "Springfield, is n't it?" Or, if the pupil is halting or fragmentary in his answers, the teacher concludes the matter by giving a full statement. "Tell about the purchase of Louisiana." Pupil — "Jefferson bought Louisiana from Napoleon, paying several million dollars for it." Teacher — "You mean that Jefferson, seeing how eager the people of the Southwest were to get possession of the mouth of the Mississippi River, authorized our commissioners in Paris, Livingston and Monroe, to purchase New Orleans and a small strip at the mouth of the river. But the commissioners were offered, by Napoleon, the whole of Louisiana Territory for $15,000,000, and they boldly accepted it." Pupil — Yes, that's what I meant." This kind of reciting, with variations of more or less help from the teacher, is perhaps too common.

Teachers are not willing to let pupils fail, and so

they ease up the situation by suggestions and by direct help. But children who have not learned their lesson, for no good reason, should be allowed to fail, — yes, to fail completely and absolutely; and they ought to feel the shame of it. While those who can recite should be encouraged and rewarded.

2. Another mode of helping children excessively is that of asking too many easy questions, by trying first one form of question and then another, by suggestions and modifications to see if some sort of an answer can be extracted from a child. Teacher — "What was the effect of the Kansas-Nebraska Bill?" (Pause.) "You know about the Missouri Compromise?" (Pause.) "What about slaves in the Territories?" — "How were the people in a Territory to decide the question of slavery?" — "What would happen when the Territory was admitted as a State?" In such case as this the mere naming of a topic by the teacher ought to be sufficient. If the pupil has studied his lesson, let him recite the whole topic without interruption and without questions unless serious blunders appear. Students should be required to recite lessons in full, stating all essential facts without aid. This requirement is fundamental.

3. It is quite a common fault in reading-lessons and in other subjects for the teacher to pronounce new and difficult words for the pupil as they come up in the lesson. This is an infringement of the right of the child to help himself. We now know that children in the second and third grade (and often in the first), if they have been properly drilled in the use of phonic sounds and in

combining them, can quickly and gladly help themselves out of most difficulties. Such children like to meet new words and to try their strength upon them. If primary children can do this, how much more appropriate is this requirement for older children. They have also the dictionary with which to help themselves. This helplessness of children in the face of small difficulties is a serious criticism of our teachers. When they meet real difficulties in grammar and arithmetic and composition, how will they bear themselves? Teachers should insistently and perpetually train children to self-reliance, to real effort to do things.

4. By patching up children's faulty work in a variety of ways, teachers lower their standards, blur over defects, and cultivate a sort of deception as to the real character and ability of children to do things. In correcting spelling-lessons, in problems set for arithmetic, in constructive exercises, in drawing, in composition, where the work is supposed to be entirely the child's own, correction and help are sometimes rendered by the teacher, while the results are offered as the child's independent work. Be careful to let the pupil's work stand clearly for just what it is.

Combined with this carelessness in slurring over and correcting defects in work is often a disposition to treat children indulgently, to overlook the faults of neglect and laziness. This tendency easily develops into excuses for deception and cheating. The boundaries between truth and dishonesty are blurred over.

5. In the home and the school children are often

helped into careless, slovenly ways by not being held responsible for completing their work satisfactorily, and then for cleaning up or setting things in order after it is finished. A little girl of four years was required by her mother to collect her scattered playthings and to clean up the muss she had left on the floor. The child replied to this request, "Mamma, do you know that cleaning up a muss is my favorite hateful?" But cleaning up the muss and putting things in order is a necessary part of every child's training. To step in and relieve a child of such duties is a faulty kind of helping. It is helping into bad habits.

6. One of Herbert Spencer's fundamental principles is that we should allow people to suffer the natural penalties of their failings. If a child is troublesome on the playground, he should lose his play. If he is careless in scattering his playthings, he should put them in order. If he wastes his study time, he should make it up at other times. Teachers should follow this precept and not shield children from the results of their own faults and carelessness. The schoolroom is an excellent field in which to try out this principle. When schoolwork is properly arranged, it develops in close sequence. The later work depends upon the earlier. Failure to do one's duty one day revenges itself the next. The teacher should let children feel the full force of these natural penalties, modifying his treatment in case of sickness or other imperative causes. Progress in studies should be orderly and systematic and as little subject to whim or accident as possible. This orderly

development of knowledge and habit in thinking and acting is the basis of success. The best help a teacher can render the pupil is steady consistency in holding to reasonable requirements in mastering lessons, in using one's previous knowledge.

II. INTEREST AND EFFORT

A second controversy whose proper settlement may strengthen our plans for securing self-activity and independence of thought is the recent conflict about interest and effort. The question is, How shall we get vigorous, self-reliant thinking? The advocates of interest as an energizing factor in study, claim just this quality in their doctrine of interest. On the other side the defenders of the long-established doctrine of severe discipline, of sheer will effort, in meeting difficulties, regarded this idea of effort as the real basis for sound mental training.

Twenty years ago and for some years after there was a sharp controversy between the two parties. On the one side, the natural, genuine interests of children in school studies were offered as a strong motive for effort in acquiring knowledge. Studies which are suited to the age and understanding of children, when properly presented and discussed, are said to be agreeable and, in many cases, absorbingly interesting. Such, for example, are the fairy tales and heroic stories, tales of adventure and pioneer life, the simple biographies of strong characters, also many ballads and poems, and humorous tales and songs. Nature-study and outdoor

excursions, many live topics in geography and travel, and shop-work are full of real meaning and interest to children. Even language, arithmetic, and grammar, in the hands of a teacher who knows how to use them and awaken the practical insight of children, are not dull and stupid exercises. These natural interests of children in the content of school studies are based upon instincts that ripen in children at successive periods or stages of childhood. Boys and girls of eight to ten like the hero tales, earlier still the fairy tales, etc. As these instincts ripen, they call for certain classes of appropriate material. It is important to select the fitting subject-matter at each period; for the impulses thus awakened are the beginnings of interests that grow and strengthen throughout life. The development of these studies into permanent interests which outlast school days is declared to be a character-shaping influence of prime importance. A child who takes no interest in his school exercises, who regards them as a bore, who gets a positive dislike for his studies, is almost a hopeless case. Without developing in a boy strong and valuable interest in some subject, it is impossible to find any center upon which to organize his character.

The development of a many-sided interest in the best studies and the best forms of activity was set up by Herbart and his disciples as the goal of instruction. To awaken and establish such interests in a child's mental life and habits is an assurance that he will grow in strength and independence of thought. Through the arousing of such natural interests his whole being is

involved, his own personality is touched and molded at the center. Such interests, therefore, are not superficial and shallow, but deep and permanent. Without developing such personal interests, education is not only one-sided, it is lacking in the right spirit. It has no heartiness. It is formal and mechanical. It lacks human and humanizing quality. All knowledge needs to be touched with interest in order to function. Interest has lubricating, and, at the same time energizing, quality. Boys and girls who have felt the touch of a real interest in a strong branch of study have awakened to a true intellectual life.

The question of adjusting the materials of knowledge in the various studies to the progressively developing interests and activities of children has opened up a whole series of basal problems in shaping the course of study. Interest has thus become one of the important tests to which all knowledge material must be subjected. A more intimate knowledge of child nature and of its stages of development is an essential part of this strong educational movement.

On the other hand, the doctrine of severe effort, of the discipline of the will to overcome hard tasks, has long prevailed in the schools as the dominant theory of education. It has been a sort of intellectual rough-rider doctrine, a heroic medicine that purges the mind of its weaknesses and steels the intellectual and volitional fibers to more strenuous and untiring effort. Compared with this the doctrine of interest is but a feeble, emotional, substitute. A great many stalwart teachers of

the conservative group, in higher and lower schools, are firmly convinced that the chief value of studies lies in a severe and rigorous discipline in essentially disagreeable tasks. In the old classical schools which prevailed for centuries in Europe and in America this principle of hard training was fundamental. Mathematics in our secondary schools and colleges stood for the same idea of brawny, intellectual strenuosity. Arithmetic and grammar in the common school were long held in reverence because they were tough studies, because they were hard and painful in the process of mastering. Education in this sense was an intellectual gymnastic of the severest sort.

Such studies, severely handled, are a means of energizing and fortifying the will, of building up and strengthening character. From this point of view the essence of character is strength of will, and the discipline of studies should center in this one aim. This kind of training relates itself also very closely to the needs of life. Life itself is made up of struggles and hardships. It demands fighting qualities, strength of will and stubbornness of purpose. Education should train children not for a life of ease and gratification, but for toil and hardship. This is a very simple doctrine, but it goes at the heart of the matter and sees life as it is and not as it might be. This doctrine of strenuous, sustained will-power or effort is one that appeals to strong, ambitious minds. It sets up high standards of achievement and balks at nothing in the way of hardship and toil. It contains a strong element of the

heroic, the unsubduable. The free man is the one who has a strong will, free to think, free to act, and strong in execution.

This theory of education has had a long history, has dominated the best courses of study, and has produced thousands of the world's leaders, who have had full confidence in the virtue of such a training. William James, the psychologist, in his "Talks to Teachers," while granting much to the opposing doctrine of interest, returns with special emphasis to the older doctrine of effort, of stubborn will-power exerted against obstacles and disagreeable tasks. He even advises us to do something disagreeable every day as a mental discipline, as a severe training in mental and moral hardihood. Again, while a genuine interest is a desirable adjunct and a strong reinforcement in all studies, it may be generally admitted that there are times when sheer will, unsupported by direct interest, must fight out the battle alone. This demand for strong, independent will is met with in every important study and at frequent intervals, so that this mental attitude must be cultivated and exercised.

An explanation of the conservative opposition to the doctrine of interest is found in the fact that the older pedagogy was profoundly distrustful of the feelings, — i.e., of the emotional nature. The feelings were looked upon as the fluctuating, unstable element in human nature; intellect and will, on the other hand, as reliable and stable, and hence as properly controlling and dominant. Interest, which is a phase of feeling,

was identified with the idea of a soft pedagogy, with a sugar-coating process of instruction, with pleasing and entertaining programs.

Our recent psychology is far more respectful in its attitude toward the feelings. It looks upon the feelings, in large measure, as an essential and noble part of human nature, powerfully and rightfully influencing every phase of life and playing significantly into all forms of study. The feelings are, at their best, the noblest expressions of the human spirit. A pedagogy, therefore, which ignores the feelings, or finds in them only a dangerous and antagonistic power, is very one-sided and lame. It does not bring into its system of thought the beneficent harmony of the whole mental organism, — intellect, feeling, and will.

In the past, the doctrine of the severe discipline of the will has long had a controlling influence in shaping courses of study and methods of teaching. It is now the favored theory of many strong teachers. But in recent years the doctrine of interest, allied to child-study and the later developments of psychology, has broken in upon this older theory of hardship and severity, demanding a reorganization of courses of study and of instruction. One main prop of the older theory of will-discipline was removed when the long prevailing notion of distinct mental faculties, as accepted by the older psychology, was attacked and discredited. Our present psychology rejects the notion that the mind consists of separate mental faculties, like memory and will, which can be isolated and separately trained and

strengthened. Angell's psychology, for example, does not recognize the will as an entirely distinct form of mental action, but as a product of the evolution of all the mental life, including the feelings.

Again, the notion that the mind is best trained by doing tasks that are irksome and disagreeable was long regarded as a part of the necessary discipline of life, and without such mental hardship children would be ill-prepared to face life's real problems. In reply to this it may be said that the people who are doing the best work in the world are those who are interested, are heart and soul absorbed in their enterprises. On the contrary, the dull, stupid, uninterested worker is the hopeless case. We have no desire, whatever, to develop in society a lot of drudges. What we need is persons in every employment who are thoroughly interested in their work, — enthusiasts, artists, if you please, — not people who are working hopelessly, keeping at their tasks by sheer exercise of will, but people who look forward, with happy faces and interest, upon their tasks. In the severe practical duties of life, therefore, to depend mainly upon will and stubbornness in overcoming difficulties is a friction-producing, nerve-racking, uneconomic method of running the mental machinery. It makes a virtue of mere hardship. As Lowell says, why should we go about to make life duller than it is? Shall we make school duller than life itself, and then call it preparation for life? The one-sidedness of the old disciplinary pedagogy consisted in making this dismal routine of painful effort the rule

rather than the exception. It alone was made the standard upon which the value of studies for a complete curriculum was measured. We can well afford to travel through tunnels and darkness for short distances, but we are unwilling to be in the dark all the time: unless we enjoy being miserable and in making others, especially the young, equally unhappy.

In the long history of education and in the present conflicting attitudes of practical teachers, these opposing theories of training stand out in sharp contrast; first, the notion of severe and painful hardship in study, second, a many-sided and growing interest in the content of school studies. Many conservative teachers in higher and lower schools still hold that the chief value of studies is in giving a severe and rigorous mental discipline in essentially disagreeable tasks. The other party holds that a genuine interest in studies and motives based on interest furnish the life principle of the best instruction.

The solution of this contradiction between opposing theories of instruction is not found in the acceptance of one and the rejection of the other. We must learn to do both things and to combine them as closely as possible in all important studies. Hard problems and more or less of painful effort in solving them must be met at almost every turn in a well-devised course of study. So much greater is the need for a growing interest in these very problems and in the further objects to which they lead. Hard problems are the very things in which children have the strongest interest if they are

properly inducted into them. Interest does not imply an enfeebling and disintegration of mental powers, but rather a higher concentration of effort upon difficult tasks. Hard projects which require a good degree of courage, skill, persistence, and obstinacy are exactly suited to arouse the spirit of youth.

What sort of a philosophy of life have those persons who imagine that the real achievements, the heroic enterprises of men and women, have been wrought out by strong-willed people without the powerful influence of the feelings, sentiments, and strong emotions? What, for example, inspired David Livingstone to his strenuous labors in Africa? Can any one imagine that religious feeling and a lofty enthusiasm were any less significant in his life than his remarkable energy of will? Walter Scott was a man of dominant will; but his lively interest and generous enthusiasm are reflected in every line that he wrote. A strong will, not well balanced with fine feelings and sentiments, is a most dangerous quality in a human being. Why should the schools limit themselves fundamentally to the cultivation of a strong will and ignore the wholesome, sweetening, humanizing interests and feelings? Why should the best part of human nature be left out of a school program?

All studies swing back and forth, more or less, between the interesting and uninteresting. The thing that saves us from despair is some worthy object or purpose that awakens our interest and beckons us on. A strong interest and a rugged will combine their forces

and we are fully prepared to encounter and overcome obstacles. It is often remarked that a strong man accomplishes great tasks easily. His whole nature is enlisted in the task, his whole mind is energetic and operative, and not merely so-called pure will, which, if it were a possibility, would be an unfortunate and dangerous possession.

Fortunately there is a much larger element of vital interest in most studies than the old pedagogy allowed. The strongest and best kind of interest is that which engages itself in the solution of important problems, and leads out along a progressive line of valuable thought. The teacher, in the organization of studies and in the mode of handling them, should become an expert in interesting children in these problems and in the difficult tasks which lead to their solution. He should awaken in children an ambitious response to such problems, which entice them to effort and yet hold their secrets in reserve. When interest is awakened in connection with real problems that belong to a child's life, there is a stirring of his energies that will help to carry him through many toilsome efforts. It is the interplay of interest and painful effort that gives the proper balance to studies and to theory and practice in dealing with studies.

Finally, we are not left to the uncertainties of theoretical discussion and debate to settle the question whether these two opposing ideas, interest and effort, can be combined in teaching children. There are scores and hundreds of schoolrooms where the happy, eager,

and earnest activity of children is an unmistakable proof that they are thoroughly interested and that they are exerting themselves to their full strength. Our curriculum has already absorbed into itself a large body of rich culture material from literature, geography, music, history, science, and art, which, beyond all controversy, has proved itself highly interesting and stimulating to the minds of children. The so-called disciplinary studies still remain, but they, too, are handled in the spirit of conquest on the basis of an aroused interest in the children. The one question that now remains is how to make the best combination of these strong elements of training. Every teacher should be fully aware of the value of each of these ideas, and work out in his own way the problem of combining them, and of reaping the benefit of their combined strength.

SUMMARY OF CHAPTER

Self-activity and initiative

The general progressive advance of a child is from dictated forms of study, gradually, but more and more, toward freedom and independent judgment. Yet even the mature scholar and thinker must first be sure of the facts which nature and science dictate as the basis of thought. In three practical ways, as shown in the preceding chapters, the spirit of self-reliance, or the free exercise of one's thinking power can be cultivated: first, by the independent reproduction of dictated lessons; second, by self-help in the working-out of problems,

throwing children back upon their own resources in dealing with difficulties; and third, by the combined spirit of interest and effort in attacking hard problems. The higher, more independent form of mental life aimed at in these ways we express by the word self-activity.

A still higher and less easily reached phase of self-activity we may name "initiative." It is the ability to project new problems, to organize new and unclassified material, without help, on original lines, to lay out new trails. In selecting and writing themes, even this more difficult kind of originality can be cultivated. In designing complex constructive problems, initiative is necessary. In working out a strong, logical argument in debate, a similar power is developed. Initiative, in this sense, requires a degree of boldness and self-confidence to break loose from the accepted past and launch out for one's self upon the unknown. It is the spirit of the inventor and discoverer. It sets up new and difficult problems and requires the same elements of knowledge, of interest and will-power, of self-reliance and boldness, that we have already described.

Illustrations showing the need of strenuous and painful effort

1. The beginnings of almost any new subject of study are apt to be strange, hard, and uninteresting, and call for a strong persistent effort; e.g., a new language like Latin or German; algebra, drawing. But new difficulties are constantly rising in any

important study that require more or less of painful effort.

2. A hard, complicated problem in arithmetic demands steady, persistent effort for some length of time before it begins to clear up. Strong, voluntary attention is required for this.
3. The breaking-up of bad habits is painful. It requires strong, conscious effort. It demands a positive and sometimes extreme effort of the will to turn away from habits that are associated with our pleasures; e.g., smoking, drinking, etc.; also the use of slang and ungrammatical English.
4. Some of the important studies are generally regarded as the least interesting, as arithmetic, grammar, geography, and spelling: yet they must be thoroughly mastered. Some of these serious difficulties lie at the beginning of the school course in primary grades.
5. Reviews and drills are considered the dry part of studies, but they are the chief means of securing a complete mastery of studies. One must submit to strong and irksome discipline to accomplish such tasks.
6. Carefulness in small details, and accuracy, as in drawing, arithmetic, composition, spelling, and bookkeeping, are very irksome to many people, but they are important habits for success in life and are gained by persistent and painstaking effort.
7. Neatness, punctuality, and other secondary vir-

tues are habits formed by self-discipline, by strong self-direction, by conscious struggle with one's own tendencies.

8. Skill and perfection in any art are gained by persistent and often tedious exercise and repetition, as typewriting, piano-playing, telegraphy, proof-reading, public speaking. A high degree of skill either in thinking or doing is a result of more or less painful effort.
9. The practical utility of certain important studies like grammar, drawing, algebra, and parts of arithmetic are not easily demonstrated to children. They must take them on faith and buckle to their tasks without special incentive.
10. Disagreeable and even repulsive tasks are often met with in the home, in school, in social life, which we must learn to meet unflinchingly. They are a part of the warp and woof of daily life which we learn by hard effort to deal with.
11. The will must learn to exercise a control over passion and wrong impulses. Cost what it may of struggle and pain, we should be trained to self-control and inhibition of many tendencies. The power of inhibition is one of the fundamental needs of every person.

Positive proofs of the value of interest in studies

1. The absorbing interest shown by primary children in fairy tales and folklore brings several advantages. It makes the primary school a happy place

for teacher and children. It is a means of drawing and holding the attention of children and of forming a habit of attention at a time when they have as yet little power of voluntary effort. The stories are the best and quickest means of enriching the common vocabulary of children and create a strong desire to learn to read these and other stories in books.

2. In intermediate grades the delight which boys and girls take in *Robinson Crusoe*, Ulysses, William Tell, Siegfried, Kingsley's *Greek Heroes*, the stories of Boone, John Smith, Champlain, and other pioneers, the Robin Hood stories, the *Scottish Chiefs*, and other hero tales, is the foundation of much of the best work in those grades. The dramatization of these stories brings out in the best way possible the expression and action of the characters. The mastery of oral and written language is strongly reinforced by the interest in these tales. An equally important effect is the growth of a strong tendency to home reading of the better class of books. Many children get a large part, and often the best part, of their education from this excellent habit of home reading. To interest children in the right kinds of books and to lead them into good habits of reading is one of the greatest achievements of the school.
3. American history and biography are now being opened up to grammar-grade children in vigorous and hearty narratives that are attractive and in-

structive. Strong, simple characters like Penn, Franklin, Roger Williams, Andrew Jackson, Paul Jones, Robert Fulton, Peter Cooper, and Webster stir up the best impulses in young people. The big enterprises of public improvement, the forward march of our pioneers and farmers across the continent against Indians and natural barriers, the conflict of great forces within our nation are absorbingly valuable thought material for boys and girls, and they are responding to it in fine spirit. Such topics open out into biography, into patriotic and social enterprises. They are the true education into citizenship, into a lively participation in public affairs.

4. Geography, as it is now being studied, creates a strong interest in our national resources and the means of preserving and developing them, in books of travel and of foreign lands, in geology and the history of the earth's crust, in big plans for the rebuilding and sanitation of great cities, in irrigation projects, the regulation of rivers and the reclaiming of deserts. Its historical and social bearings are of equal value.
5. Science and nature-study lead to practical excursions into fields and laboratories, to the enjoyment of plant, insect, and wild animal life, and weather phenomena. It is the entering wedge into notable wonders and utilities. Boys and girls who become heartily interested in one or more of these realms of nature have a rich life inheritance in store.
6. The industrial arts, when combined with fine art,

are the beginnings of a real respect for the common occupations. Such studies in the shop and studio develop the sympathies for the superior and beautiful things in daily life. Through the work of the schools many girls are learning to appreciate and enjoy skill and art in household employments. In the agricultural work of corn selection, testing, and cultivation according to scientific methods, many boys and their fathers are taking a new and enlarged view of the possibilities of farm life.

7. Music as handled in many schools to-day is a joy to children. This growing appreciation for good music is a source of culture and gratification for life. It has a home value, a social value, and a public and national value. It is an appeal to the best emotional and æsthetic impulses.
8. The devotion to physical training, in school dancing and games, in gymnastic practice and field sports and contests, is an unmistakable proof that we now believe, even in regular school exercises, in getting into close and vital relation with children's real enjoyments, with their strong social and physical impulses.
9. Throughout the years of school training we are now introducing children to the many-sided attractions and pleasures of the carefully selected literature of all the historic peoples of the world, Hebrews, Persians, Greeks, Germans, Italians, French, English, Scandinavians, and Americans. The selection, ordering, and mode of presentation

of these materials are based primarily upon the natural interests and sympathies of children in the various grades. The unmistakable aim of all this labor with rich culture material is to get into close contact with a child's heart, with his æsthetic, emotional, and moral nature. The results have been encouraging in a high degree, in the aroused interest and permanent improvement of children.

10. The development of a strong and lasting interest in any of the above-described domains of knowledge has shown very often a tendency to spread into other studies, to awaken intellectual effort in a widening circle.

CHAPTER VI

STANDARDS OF EXCELLENCE

I. OVER-THOROUGHNESS AND SUPERFICIALITY

THE word "thoroughness" is supposed to denote a quality peculiar to first-class instruction, and "superficiality" may suggest its opposite. The real contrast is between over-thoroughness and superficiality in studies. Teachers differ much as to what constitutes proper thoroughness. It implies, at least, a through-and-through mastery of what is studied. It is the result of severe application, rigorous thinking, reviews, and drills, with persistence in these things till complete knowledge is gained. In its final issue, it brings the power of adequate expression and readiness in turning knowledge into use. We all believe more or less in this kind of thoroughness, and we criticize and deprecate a training which has none of it. Superficial knowledge, on the contrary, is shallow, careless, and fleeting. It produces bad habits, and contributes to mental feebleness and fickleness. (The term "superficial" is not really adequate to express our meaning, for much of our knowledge is necessarily superficial, and not to be condemned for that reason.)

On the other hand, we know that thoroughness is easily carried too far. It over-emphasizes little and unimportant things. It will, not seldom, strain at a

gnat and swallow a camel. The schoolmaster, if he is thorough, is always in danger of becoming a pedant in trivial things. Over-thoroughness defeats its own purpose. In trying to do all things with equal thoroughness, it fails to get the important things well done. In its punctilious care for dotting the *i's* and crossing the *t*'s, it fails to bring out the proper structure and meaning of an important sentence or paragraph. It neglects the weightier matters of the law for trivialities. Trivial things, to be sure, sometimes rise into importance. In such exceptional cases they are no longer trivial. Excessive care in the spelling of unusual words is such a common error. We must be constantly estimating relative values and must lift the more important, significant things into prominence for complete mastery. In a difficult reading-lesson from Irving's *Rip Van Winkle* are found a score of unusual words, the very ones which the teacher is most apt to assign for a spelling-lesson. In the same reading-lesson (less than two pages in the first part of the story) is a list of common words which children need to know. The two lists are as follows: (1) descendant, gallantly, chivalrous, accompanied, popularity, conciliating, discipline, shrews, malleable, tribulation, termagant, tolerable, obsequious inherited, aversion, pestilent, insuperable, assiduity, patrimonial; (2) village, siege, character, obedient, neighbor, owing, spirit, fiery, furnace, curtain, sermons, virtues, patience, thrice, error, errands, piece, wrong, cabbages. Teachers are inclined to spend the time in drilling children upon the spelling of these uncommon

words and to overlook or neglect the common words for which they will have frequent use in writing. This illustrates a not uncommon practice of emphasizing the unimportant and of neglecting the more important.

In every good piece of literature may be found a list of rare and peculiar words which will never be taken up into the pupil's ordinary vocabulary for daily use. Exercises and drills upon the spelling of such words are a waste of time, time which is much needed for important studies. All studies are made up more or less of useful knowledge which has only this secondary value and should be touched upon more lightly.

The fundamental and basal things must be thoroughly mastered, through painstaking study and reflection, by review and drill; but many facts and details come into view in every important topic which it would be foolish carefully to memorize and master. And yet they are necessary to a proper treatment and understanding of the more important ideas. These lesser facts form a scaffolding which is serviceable while the main line of thought is being built up, but can fall away and disappear later on. The concrete details which are necessary, by way of illustration and significant background, to bring out an important and fundamental truth, may afterwards be neglected and even forgotten, while the central thought still stands out with a clear meaning. We do not try to remember the details of particular problems with which we illustrate and master a rule in arithmetic. But we do hope to hold the principle or rule firmly in mind for future use.

In working out the details of an important topic in geography, like the Erie Canal, it is not necessary to fix permanently in memory the number and size of locks, the exact dimensions of channels and viaducts, the figures representing numbers of men and expense of construction, revenue from tolls, etc. But the main ideas and results should be well fixed and retained.

We should learn to focus attention more and more upon the important central thoughts and conclusions and main facts which support them, and to use the lesser details in their subordinate relation as accessory and transient in value. It is primarily a question of sifting out values and of constantly dropping off the lesser values and retaining the gold nuggets. It is a constant effort to get at essentials. In reading the best novels of Scott or Dickens or Tolstoy, we make no effort to remember the numerous details, the minutiæ of conversation, description, and gossip, no matter how interesting and essential these are, temporarily, to the grasp of the whole spirit of the story. In reading the newspaper, we run over the sheet, picking out the more important items and ideas. In reading a strong magazine article, we aim not to retain all the facts and statements, but to select and grasp at main points. Likewise, in reading the great historians, poets, and orators, we receive strong and permanent impressions without responsibility for details of argument and description.

One of the important habits for any good reader to acquire is that of culling essentials from books and of

holding them fast. In all the important thought studies of the school there is about every leading topic a wide fringe of environing facts and details which are necessary to a fruitful development of the main ideas, but upon which no time should be spent in reviews and drills. In reading larger histories, like those of Fiske and Wilson and Rhodes, as supplementary to textbooks, we get great advantage from rich supplemental detail and concrete illustration without feeling any twinges of conscience for not reducing it to a careful memorized product. The reference readings in geography, literature, and history, which are brought in to support and enrich the text, have this passing value.

The rugged disciplinary schoolmaster and painstaking teacher in the grades may resent this doctrine of superficiality in study, or better, perhaps, the transitoriness of such knowledge. His rejoinder is that we already have too much careless, superficial learning: that side of the study problem is already too marked and will abundantly take care of itself, and, therefore, it can well be left out of account. Teachers should not be encouraged in this kind of superficiality. This reply is not adequate to meet the situation. There are essential ideas or points in every subject that must be grasped with unmistakable sharpness and clearness. They should be thoroughly mastered and remembered. Other parts of temporary value, as illustrative or explanatory material, should be used in a subordinate way. It is not, therefore, a question of dropping out entirely these lesser details, but of knowing how to use

them for temporary purposes. These items are essential to the proper treatment and exhibition of the main points. In retelling a story in primary grades, a child will naturally omit many of the particulars and yet give a satisfactory reproduction. In this respect children differ greatly in power, and a teacher who holds all alike and strictly to a full rendering will have a needlessly hard task of it.

Our course of study is too extensive. Children cannot master it in the time allotted even with good teachers, if this principle of thoroughness is to be applied rigorously to all parts alike. A wise mode of reduction and elimination is to sift out the few central, manifestly important topics and to organize the whole course upon this much simpler basis. But in the lively and realistic treatment of any such important topic, a rich body of concrete, detailed facts, pictures, and illustrative materials is necessary as a background and setting for the organizing idea. In the final drills and reproductions, much of this secondary material may be profitably omitted.

SUMMARY OF THE ARGUMENT

In the treatment of such important topics there is always a basis of leading points that should be thoroughly planned out beforehand by the teacher and later mastered by careful study of relations, by comparisons, and thoughtful reviews. But on the outer fringe of the discussion is a large body of illustrative facts that are a mere housing or scaffolding to the

main ideas. Thoroughness in memorizing all these details would be pedantic in the extreme, and would ruin any course of study thus planned.

From this viewpoint, it is not true that whatever is worth learning at all is worth learning well, that is, with complete thoroughness. A teacher, therefore, must learn to discriminate even among those facts which are necessary to a proper treatment of a topic. In good teaching the thought movement is a rapid shifting back and forth from the centrally important to the merely illustrative or secondary. The teacher must have a keen eye to discriminate between the main issue and the merely collateral and illustrative facts. All good treatment of thought materials is a process of collecting and weighing out of relative values, a stressing and repetition of the main ideas, and a relegation of the secondary facts of study to a transient service and early forgetfulness. Thus we get the true equipoise between opposite tendencies, i.e., between the extremes of over-thoroughness and superficiality.

The word "superficiality" is somewhat obnoxious to good teachers, but in spite of this it may serve to point out an important distinction that teachers are called upon to make in judging values in the materials of study. Resentment against a term should not blind us to a fundamental necessity in proper instruction.

This doctrine of transient and superficial knowledge may give offense to some, and an illustration may help to clear the atmosphere of misunderstanding. Suppose that a student is reporting to the class on the life of

William Penn. For this purpose he has read the following passage from John Fiske's *Dutch and Quaker Colonies in America*, vol. II: —

In 1670, the admiral died, commending William with his last breath to the special care of the Duke of York. William was left in possession of an ample fortune, and devoted himself to writing and preaching in defense and explanation of Quakerism. His learning and eloquence, with a certain sobriety of mind that qualified his mysticism, made many converts; nor is it unlikely that his social position and gallant bearing were helpful to the cause in some quarters. It was largely due to Penn that current opinion gradually ceased to confound the disciples of Fox with the rabble of Antinomian fanatics with which England was then familiar, and to put them upon a plane of respectability, by the side of Presbyterians and other dissenters. Again and again, while engaged in this work, Penn was thrown into prison and kept there for months, sometimes in the Tower, like a gentleman, but once for six months in noisome Newgate, along with common criminals. These penalties were mostly for breaking the Conventicle Act. The reports of the trials are often very interesting, by reason of the visible admiration felt by the honest judges for the brilliant prisoner. "I vow, Mr. Penn," quoth Sir John Robinson from the bench one day, "I vow, Mr. Penn, I am sorry for you. You are an ingenious gentleman, all the world must allow you, and do allow you that; and you have a plentiful estate; why should you render yourself unhappy by associating with such a simple people?" Sometimes the prisoner's ingenuity and resourcefulness would baffle the prosecutor, and in despair of other means of catching him the magistrate would tender the oath of allegience. But Penn's subtlety was matched by his boldness. Once when the judge insulted him by a remark derogatory to his character, the reply came quickly and sharply, "I trample thy slander as dirt under my feet!" And this boldness was equaled by his steadfastness. Once the Bishop of London sent word to him in the Tower, that he must either withdraw certain statements or die a prisoner. "Thou mayest tell him," said Penn to the messenger, "that my prison shall be my

grave before I will budge a jot, for I owe obedience of my conscience to no mortal man."

The student's actual report of this passage to the class might run as follows: —

On the death of his father in 1670, William Penn inherited an ample fortune. He gave his time to the preaching of Quaker doctrines. His eloquence in preaching and his social position probably did much to give the Quakers a standing of respectability, somewhat on a par with Presbyterians and Puritans.

As he traveled about preaching, he was often thrown into prison, once for six months in filthy Newgate with common criminals.

In his defense before the magistrates he won the admiration of the judges by his shrewdness, intelligence, and ability to defend his cause. One Judge Robinson openly applauded him and wondered that he consorted with such simple people. When one of the judges gave him a sneering insult, he boldly replied, "I trample your slander into the dirt beneath my feet." He was also very steadfast. When the Bishop of London sent word to him that he must recant or die in prison, he sent back the reply that he would make his prison a grave rather than submit his conscience to the dictation of any man.

This statement is not quite half so long as the original passage. Another student, reporting on the same passage, would give the gist of the matter in a still more condensed form occupying perhaps a quarter of the original space. What a pupil ought to remember permanently from such a passage might be expressed thus: —

William Penn, though rich and aristocratic, preached the Quaker doctrines, suffered for them in prison, defended himself boldly and eloquently before the courts, and refused absolutely to submit his conscience to any man's rule.

Many topics studied in history, geography, literature, and science admit of such a detailed introductory treatment, concrete and descriptive; while the final summary will give a condensed statement of essentials which should be mastered and thoroughly fixed. This kind of study imposes a constant thoughtful discrimination and a habit of judging facts in their relation to fundamental ideas.

Illustrations of things to be thoroughly understood and mastered

1. Centrally important ideas and characters in history.
   Facts must be grouped and combined in such a way as to bring out the important ideas and persons; e.g., the idea of self-government as developed by the early colonies in New England; the characters of John Winthrop and Roger Williams.
2. Main processes and principles in nature-study and science; e.g., the circulation of moisture by evaporation, winds, rains, etc.; the life history of trees, plants, insects, etc.
3. The complete mastery of necessary formal elements; as, the phonetic elements in reading and spelling and quickness in their use; the arithmetical tables and facts, simple notation in music.
4. Memorize important select passages in poetry and prose, especially those which express fundamental ideas or sentiments or embody artistic conceptions.
5. The thorough understanding and use of processes

in arithmetic and the underlying continuity in these processes.

6. The sequence of important topics in any large unit of study, in geography, history, and science; e.g., the lumber industry, the growth of territory in the United States.
7. A few main classes and distinctions in grammar, and the ability to analyze any sentence into its main elements.
8. Complete memorizing of vocabularies, phrases, and modes of sentence construction in a foreign language.
9. The conclusions and summaries that result from thoughtful comparisons; as in comparing great rivers, cities, states, industries, nations, continents, etc.
10. The dates of a few centrally important events in history; as, 1492, 1607, 1620, 1787, 1861, in American history. But perhaps more essential are the few great epochs and periods in American and world history, expressed graphically by diagrams.
11. The working-out of complete units of construction in the manual arts, including design, construction, and use.
12. The substantial mastery in essentials of complete stories, poems, and even larger masterpieces in literature: e.g., *The King of the Golden River*, *The Pied Piper*, *Evangeline*.
13. The more complete mastery of the main elements and principles of all studies, as revealed by the

power to make new applications to various studies and to life conditions outside of the school.

14. The constant emphasis of moral ideas and dispositions and habits of behavior, showing respect, courtesy, helpfulness, honesty, courage, etc.

Illustrations of knowledge which is of secondary or transient value

1. In map study and drawing, the smaller bends of coast lines and rivers, likewise the less important towns, mountains, and political divisions. For example, in studying the North German Empire in Europe, the names of the twenty-five States of which it is composed, are not required. It is of doubtful value to learn the names and location of all the forty-eight capitals of the American States.
2. The number of men killed or made prisoners in battles. In the Civil War even the names of many subordinate battles would better be omitted, as is now customary.
3. Numerous dates and facts in history may be used temporarily or omitted, such, for example, as the smaller details in the early history of the thirteen American colonies; e.g., the details of Indian massacres, etc.
4. Much of the statistical data in geography; as, for example, the quantity of products of each of the States and the rank of each State as to production. Such statistical data arranged in an appendix can

be frequently used in making comparisons among States, cities, rivers, productions for the whole country, and in foreign lands.

5. Names and order of English, French, German, and Roman sovereigns. Instead of this an interesting biographical acquaintance with a few important characters, such as Elizabeth, Cromwell, Victoria, Peter the Great, Louis XIV, Frederick the Great, Napoleon, Charlemagne, and Cæsar, is desirable.
6. In general omit from the final drills all facts in geography and history which are not associated directly with important ideas or which do not help to clear up such ideas. Many names which we have often learned and located in geography have no special significance, as Cape Mendocino, Lake Baikal, Desert of Gobi, Limpopo River, Tiflis, Orizaba, Nova Zembla, etc.
7. Many of the secondary distinctions and classifications in grammar; as the kinds of conjunctive adverbs, prepositional phrases.
8. The spelling of numerous unusual words. Thus save time for drill upon common everyday words.
9. In studying literature, the mere names of authors, books, and biographical data that carry no meaning and are an encumbrance to the mind and something of a deception.
10. In arithmetic an elimination has already been made of less important tables in compound numbers, and of many advanced but unsuitable topics.

II. PERFECTION AND CRUDENESS IN WORK

Closely allied to this doctrine of thoroughness in knowing is the notion of precision, and accuracy, and even perfection in doing. Its opposite is crudeness and careless workmanship running off into slovenliness.

In writing, drawing, and speaking, skillful motor habits are to be acquired and a superior standard of accomplishment set up. In constructive exercises and bookbinding, in domestic science laboratories, in shop-work and gardening, motor skill is demanded and steadily cultivated. Children gain quickness and muscular control in physical and gymnasial exercises and in field sports. During recent years the physical or motor activities have developed in scope and importance until about one half of the time of the school is now employed in motor effort of one kind or another. It is of much importance, therefore, to determine the standards of excellence upon which this kind of work is to be measured.

It is the peculiar business of the school to set up good standards and to work definitely and steadily for their realization. Many skillful teachers set up from the very start the idea of perfection in doing things as their standard. In arithmetic, for instance, a high degree of speed and accuracy, as near perfection as possible, is the aim. In spelling, writing, map-drawing, and in tool-work in the shop, a standard close to perfection is kept in view. To secure these standards severe and long-continued drills are necessary, and oftentimes the

work becomes irksome and even exasperating to the children.

Over against this demand for a high grade of exactness and precision we may set up the opposite doctrine of the necessary crudeness and imperfection of most activities which children are required to perform. No teacher in his senses will set up perfect formal accuracy in the writing of first and second grade children as a required standard. It is only very slowly and gradually that they acquire a reasonably accurate and legible form in writing: the same also with drawing and construction. All forms of skill and precision are acquired slowly and by degrees. Children develop through crude and imperfect effort, even through error, toward accuracy and perfection. Their muscles and physical control are at first undeveloped. Any teacher who demands perfect form in writing, and close accuracy in drawing, or exact skill in the use of tools, is forcing an unnatural and premature accomplishment upon children. This extreme demand for superior skill imposes upon children an unreasonable burden of anxiety and painful effort which brings on excessive nervous strain. It is too high a price for excellence. I have seen children in third and fourth grades, under high pressure, attain an accuracy in formal written work that was surprising, — the admiration of parents and even of teachers. But it was equally painful and harmful in its results. In wood-working problems, insistence upon extreme accuracy and skill in using tools and in fitting joints will quickly discourage boys from that kind of

work. Adults and even teachers often make the mistake of setting up adult standards for children. They seem to think that children, with one leap, can reach the point which the adult has attained after years of special training. It would save us from some blundering to remember that all skill is based on habit and habits are built up slowly through long-continued effort. Especially is this true of complicated habits like those of writing, speaking, reading, of games like ball-playing, of piano-playing, and of social behavior.

The standard of excellence that should be set up for children's motor accomplishments in school is a constantly changing and developing one. There should be a steady growth toward precision and accuracy through the years. But the adoption of very high standards of excellence in early years is a not uncommon mistake, and is a sign that the schoolmaster has not balanced up properly the account between ideal precision on one side and the necessary crudity of children's efforts on the other side.

While the strong, ambitious teacher is often inclined to require an excellence which is too severe, when the age and powers of the children are considered, the feeble, inefficient teacher is not sufficiently definite and positive in enforcing higher standards upon children. Some children of the same age are capable of much higher excellence than others, and the demands will vary with the persons. The teacher, therefore, must work on a sliding scale and constantly adjust his requirements to the age and individual ability of the pupils, while ever

reconciling the two opposed tendencies of too great stringency on the one side, and too much looseness and carelessness on the other. What children can do with relative freedom and ease, or, stated negatively, without overstrain and nervous anxiety, is safe. It doubtless seems desirable to many teachers to have a fixed standard, so that they may know just what is required and then hew to the line, but the demand is practically impossible and unjust. Standards of excellence in formal dexterities are necessarily relative and progressive. The teacher is very certainly and distinctively an adjuster. In every class and with every child, so far as possible, there should be a fair and reasonable consideration of all the varied and conflicting elements in the problem. In this rational, prudent, and sympathetic measuring up and balancing of forces, the teacher finds his most difficult problem and his chief duty.

Up to the age of about sixteen years children should have a wide variety of experiences of the motor type, games, tree-climbing, and field sports, gymnastic drills, dancing, boating, swimming, boxing, tennis, ball-games, jumping, running, turning, quoits, horseback riding, etc. In none of these things is a very high degree of skill necessary. In general, only a limited skill is desirable. Anything that looks toward excessive skill and professionalism is, of course, excluded. This wide range of motor experiences gives health and flexibility to all the bodily organs and prepares them for later prompt and varied adjustment to life conditions. A medium degree of development in all these forms of

motor skill is desirable and is suited both to the present physical powers of children and to their future adult requirements. The teacher should, indeed, set up strong standards of excellence for all the motor activities of young people, standards, too, that call for real effort; but they should strike a medium line of skill and efficiency adapted to the age and power of children. To determine this satisfactory standard and make it steadily progressive through the grades calls for a ripe, well-balanced judgment in the instructor.

The reasonableness of this theory of gradually improving standards may be demonstrated in many ways. A twelve-year-old boy is not expected to show the skill in baseball-playing that is common among youths of eighteen. In the commercial school a young man of nineteen may easily develop a perfection in penmanship that cannot be expected in the seventh or eighth grade.

Moral education, also, as expressed in conduct, shows the same principles at work. In the growth of good manners and social behavior in childhood, to set up adult standards of action and dress would be foolish. To make premature gentlemen and ladies out of boys and girls is to set a premium on priggishness and conceit. Children grow into good manners very gradually. It is only crabbed bachelors and those who have little experience and sympathy with children who expect them to behave in the supposed perfect style of adults. Conduct is defined as the highest of the fine arts. It is so, perhaps, because social behavior is so

complicated. It requires a combination of mental and motor habits in an intricate variety of adjustments. Even adolescents, therefore, are notably deficient in what we call matured good manners. The moral dispositions which lie at the basis of suitable conduct are only slowly and deliberately matured. They involve all the elements of a rich, well-organized mental life combined with complex motor habits, and are the outgrowth of inner struggles and conquests. All these developing activities and tendencies must be combined in proper proportions and slowly settled into habits, and those habits in turn placed in the service of a free and versatile personality or will.

The careful determination of the standard of motor skill that may be reasonably set up for children is important again because it bears directly upon the problem of vocational training which is now in the forefront of public discussion, and is demanding a definite settlement. For a long time business men have criticized the schools sharply because children, on leaving the school, are not trained in those particular forms of skill which business requires; for example, in clerkships and in reckoning as required by banks and business houses. Even in the skillful use of tools in some kinds of shop-work this practical expertness has been demanded of school children. There is some show of justice in this demand in letter-writing and figuring, which most resemble school-work. But experts in most trades and special callings are too wise to make such demands from school children. The blacksmith, the

shoemaker, the tailor, and the jeweler know better than to make such special requirements. When a boy just out of school enters one of these trade or business lines he has much special knowledge yet to acquire. The main question is, How well prepared is he to learn a special trade with quickness and accuracy? What preparatory mental and motor experience and skill has he that will enable him promptly to master a special trade or calling?

The present strongly voiced public demand for vocational training — that is, for schools that will train efficiently for special callings — is an acknowledgment, on the one side, that the common schools cannot directly prepare children for special trades and occupations, and on the other side, that a special training of considerable length and variety in special schools is required in nearly every important trade or business in order to fit apprentices with the skill and efficiency necessary in these different occupations. The child needs a certain minimum of general education before beginning any special trade, and the common school is designed to give this broad foundation of necessary general knowledge. With older children in grammar schools occasional efforts are made with the beginnings of vocational work. Generally speaking it may be regarded as a mistake for a child below fourteen and even below sixteen to acquire any high degree of expertness in a special calling. Such specialization means, in most cases, the stopping of general education. But a child's opportunities for general

culture should not suffer eclipse by too early specialization.

The other chief reason, already suggested, why we cannot work out any complete plan for vocational education in the elementary school, below the high school, is that the high degree of skill required in an adult trade is not attainable by children. This kind of perfected skill in an art or trade is usually acquired by young people between the ages of sixteen and twenty, when the physical as well as the mental powers are coming to their full development. If this is generally true, trade perfection cannot be set up as a standard in the eighth grade, much less in the grades below. In business and the practical life of the industries among leading nations, the usual time set for beginning a trade or skilled art is the age of sixteen. All vocational training will be compelled to adjust itself to this important fact in human nature. There are doubtless many kinds of preliminary training in the manual arts, in physical training, games, etc., which lead up to and pave the way to more efficient vocational training later on. But children in the grades should not be prematurely hurried into skilled arts and trades before they are physically and mentally mature enough to take on the required skill.

Conclusions

1. The standard of excellence to be put forward for testing motor activities in the school is constantly changing and adjustable, and is necessarily de-

pendent upon the ability and stage of growth of the children.

2. There is danger on the one side of too low and careless standards and on the other of too difficult and unattainable standards of perfection for children.
3. Adult standards of motor skill in the trades and occupations are not appropriate to children in the grades, but belong to the vocational schools and to later adult life. Teachers, parents, and adults generally are naturally inclined to impose matured standards prematurely upon children.

A comparison of the two lines of thought in this chapter

(1) Over-thoroughness *versus* superficiality in learning, and (2) perfection in doing *versus* imperfect work, show the same governing principle which demands a moderate degree of excellence, well balanced between too severe and too careless requirements, and a progressively improving standard of thoroughness and motor skill suited to the increasing powers of children.

Examples of crudeness and of gradually developing skill in children

1. In their games children develop their skill day by day under the impulse of rivalry and of the game or play spirit. It is well advised that children of the same age and physical powers play together. They have reached about the same stage of muscular control and of skill. Gradually they develop strength and dexterity by mutual interaction.

2. A child working with others in the garden handling tools and plants, little by little takes on the movements and habits that lead to efficiency.
3. Why are some mothers unwilling to permit their daughters to help with the cooking, or sewing, and with other phases of housekeeping? Often it is because the children are awkward and unskillful. They make a muss, they waste materials, and the mothers are not willing to put up with their crude and faulty efforts.
4. A farmer's boy, in learning to milk, to build sheds and barns, to use and repair farm machines, to load hay on a wagon or build a stack, to handle calves and horses, acquires the art, slowly, of doing these things with some degree of efficiency. But the highest degree of expertness in conducting a farm is usually only gained later when he takes up agricultural study in a scientific way at a professional school.

Examples of the danger of setting up too high standards for motor excellence

1. In executing manual constructions, boys in the seventh and eighth grades are often discouraged by a teacher who requires perfection of workmanship and first-class finish. Their whole interest is lost and a certain repulsion for such work is generated.
2. In the musical training of young people excessive drills in the perfection of musical technique frequently tire and disgust children who might de-

velop more gradually to a high appreciation and skill.

3. Young children, if left to themselves to draw and sketch spontaneously, often develop to considerable power of expression with the pencil, but when dictated to by their elders, who are aiming at too much care and skill in execution, they lose interest and cease to draw.
4. In writing exercises, too exacting standards as to form produce cramped movements and check freedom, while a free arm movement is necessary to the formation of good, easy writing.
5. When parents dictate to children excessively high standards of moral behavior, they are trying to develop the virtues prematurely and are in great danger of producing hypocrisy, priggishness, and a merely formal subservience. A more gradual and rational development of manners with proper regard to a child's own feelings and impulses is a much safer course, leading to sincerity, frankness, and true courtesy.
6. Where such high standards are successfully worked out with children, the results may be unfortunate because of checking a child's general educational advance, as when music or drawing are prematurely raised to a high degree of skill. Or, the unusual skill of a boy in baseball and other sports may draw him away from his studies and give him a strong tendency to professional athletics.

CHAPTER VII

TWO IMPORTANT CONTRASTS

I. THE CONCRETE AND THE ABSTRACT

THE terms "concrete" and "abstract" stand in distinct contrast as a pair of opposites. The concrete is expressed in a material object; the abstract is a purely mental product and is immaterial. Other terms are also used to designate this same contrast; as, "particular notion" and "general notion," "percept" and "concept."

In psychology, the chapters dealing with the percept and the concept have long been regarded as of prime importance because they have been supposed to explain the universal thought process in learning. The process by which percepts are developed into concepts gives a combined inductive-deductive method which is taken as the general law for teachers. There has been much dispute as to how the concept is formed and as to the parts played by induction and deduction. But, broadly speaking, the movement is from the concrete to the abstract. In any case there is a very close connection and interdependence between percept and concept. Psychology is very explicit in saying that nothing gets into the mind except through the senses (including sensations coming from kinæsthetic reactions). The raw materials of knowl-

edge, known as "sense-percepts," are developed into concepts. All the later structure and organization of knowledge is built upon this foundation of percepts and concepts. The more closely we try, by a psychological analysis, to trace the process by which percepts grow into concepts, the more intimate appears their relation. In fact, we cannot precisely draw the line between them, so closely are they intertwined. And yet most teachers have a strong tendency to separate, widely, thinking in the concrete from thinking in the abstract. It is this tendency to produce an antagonism between things, which in their very nature should be inseparable and mutually dependent, that most concerns us as teachers.

Some people attach their thinking strongly and predominantly to objects or to sense-images based on objects. In other words, they are very concrete and realistic in their thinking. Observation and experience in nature-study and in industrial arts give such sensory training. Other persons are more reflective, and think more abstractly and in general terms. Grammar and algebra, for example, are generalizing or abstract studies.

On the one side, children and poets and artists deal in pictures, images, colors, impersonations. Primary teachers easily develop into a concrete, realistic, sense-imaginative way of thinking which is appropriate to the teaching of children. On the other side, mathematicians, grammarians, and philosophers are supposed to be abstract in their modes of thought.

Teachers, also, in the upper grades and higher schools are too much inclined to be abstract and conceptual. Unfortunately, most of our textbooks train children in abstract phraseology. The word "text," itself, as in a sermon, suggests a general proverb or rule of action. Our textbooks are made up largely of these texts. They are condensed or generalized statements, mostly stripped of concrete associations. When children come upon these for the first time, they have not the concrete experience with which to interpret them, and, unless the teacher is an artist in the way of rich concrete illustration, they are troubled and muddled. Teaching is often too abstract. Why should teachers and textbook makers put the cart before the horse in this way? Why not begin by working up through the concrete and bring out the text or abstraction at the end as a natural outcome? From some perverse cause, teachers, textbooks, and methods of teaching, in all countries and in all times, begin very often with the abstract, and only drift back at times into the concrete.

In the history of education in Europe and America, the reform movement for centuries has been a vigorous and constant struggle to escape from abstract and formal studies. In order to get children over into realism the great reform movements, one after another, have introduced pictures, objects, models, outdoor nature-study, laboratory experiment, shop-work in the manual arts, the school garden and agriculture, physical exercises and games. This movement toward objects, toward realism in many ways, has accumu-

lated a great energy in our day. Its purpose is to restore the proper equilibrium between the concrete and the abstract in our thinking processes. The theories of the psychologists have pointed unmistakably in the same direction, i.e., to a greater emphasis of the objective and experimental in the earlier stages of every subject. In spite of these facts, the majority of teachers and textbooks are still held firmly to abstract modes of teaching.

This insistent and overwhelming demand for more concrete and realistic teaching is in no respect an objection or criticism against abstract knowledge. All of our thinking must rise, sooner or later, to the full abstract or conceptual form. Otherwise, what we learn is meaningless and worthless. We must grow into a strong grasp of general notions in all subjects, else our so-called knowledge is shallow and unfruitful.

The teacher, therefore, should carry every important topic through a rich concrete line of experience. When thought has generalized itself out of the concrete, it has a sound basis. Aristotle discovered this safe basis of knowledge many centuries ago. Before forming conclusions on government, he studied carefully in detail the constitutions of scores of Greek and Oriental States as a basis for his book on *Politics*. The careless and indolent thinker likes to escape from this long labor of collecting and comparing data. It is so much easier to jump at sweeping generalizations. With children, especially, we are obliged to pile up concrete illustrations, first because their minds naturally cling

to the material object, and second, because they can make no progress without it. Philosophers and adults, who have already accumulated a rich store of lively experiences, already have these at command for use. But children are helpless before a textbook or teacher who deals in the abstract. This happens either for lack of concrete experiences, or because they are unable to bring their experience into relation to the new subject.

Strange to say, the concrete phases of study can easily be overdone. Examples of this are numerous. Children brought up in country homes, rich in the scenery of nature and farm life, show little interested attention to their concrete surroundings. It was once supposed that if children were only surrounded by active nature forces and objects, they would easily respond. They need a teacher to introduce them to Dame Nature. Nature-study in field and laboratory has not produced the results that were anticipated a few years ago.

In teaching arithmetic, after a preliminary concrete illustration of a topic, it is necessary to break away from the concrete and master number facts and processes by repeated drills for swift and accurate use. Children should not be allowed to dawdle among the concrete facts, counting on their fingers, when the time has come for the memory to fix the results and deal with a process as a rule of action. In other words, when the concrete phase of a topic has been once adequately presented, we must at once swing over into

a new line of effort, namely, the mastery of processes and principles in their general or abstract form. Application again to the concrete follows this and completes the circle of practical action.

Generalization is a strong thought process. It is simply a way of allowing ideas to grow and take on full meaning. It is a condensation of facts and their meaning into a process. Ideas spring out of the study of the concrete and develop through a study of relations and by comparisons. No amount of mere concrete observation and description can take the place of this generalizing process of thought. Generalizations are a precipitate from a thoughtful dealing with facts.

The more we study into these so-called concrete and abstract modes of thinking, the more closely do we find them linked together. The tendency to separate them widely, or to give the chief emphasis to one or to the other, is a sure sign of one-sidedness and error, especially in the teacher. The lack of balance between these two mutually essential elements has been the cause of untold error and countless futile efforts in trying to teach. The classroom teacher must become expert in the rapid movement back and forth between these two modes of thought. It is well enough for the teacher, in his effort to understand the situation as to the relation between abstract and concrete thinking, to separate them by psychological analysis, and then to remember that his analysis is artificial. In life itself and in the process of learning the two are

combined. The teacher should reflect upon and realize in full measure the necessity for both these elements and for an incessant interlocking of their forces.

Another difficulty that we must keep clearly in mind is that, as children grow older and more experienced in thinking, the emphasis can be transferred gradually to more abstract modes of thought. The teacher's skilled and experienced judgment will be constantly called into play to determine, first, the kind of concrete illustration needed by a class in any subject of study, and, second, their capacity for healthy abstract thought.

The difference between a general or abstract treatment of topics, such as is common in textbooks, and a concrete treatment may be illustrated by the following quotations.

One of the recent grammar-school textbooks in history speaks of the Tories in the Revolutionary period, thus: —

The Tories

Washington found New York and New Jersey full of Tories — men who did not want independence and who took sides with the king. In every State there were some men of this class. The ships that carried Howe away from Boston had on board nine hundred Tories from Massachusetts. Altogether about one fifth of the people of the States belonged to the Tory class. In the Middle States, however, the class was larger than it was in any other section, and the Tories around New York did what they could to annoy Washington and bring disaster upon the American cause.

The following story illustrates the more lively concrete mode of presenting the situation: —

Robert Sallette [1]

In Liberty County, Georgia, there lived, during the Revolution, a young patriot by the name of Robert Sallette. He was noted for his exploits in opposition to the Tories. His name suggests that he may have been one of the French Acadians who had been expelled from their home by the English. At any rate, he bore no love to the English, and they had good cause to fear him.

It is not known with certainty to what division or company of the American army he belonged. He appears to have been a sort of roving character, doing things in his own way, and engaged from time to time in the most reckless adventures. His very name was such a terror to the Tories that they made plans to get him out of the way. One of the Tories, a man of considerable wealth, offered a reward large enough to tempt some one to assassinate the daring partisan. No ordinary man would dare to attack Robert Sallette in the open.

When Sallette heard of this reward which was placed on his head, as if he were a criminal or a wild beast, he thought he would try to even up scores with the rich Tory. He disguised himself as a farmer and provided himself with a pumpkin, which he placed in a bag. With the bag swinging across his shoulder he crossed over the enemy's lines and made his way to the house of the Tory. The very boldness with which he walked into danger took away suspicion.

Walking up to the door he gave the knocker a sharp rap and was invited into the comfortable sitting-room of the Tory gentleman. He deposited the bag on the floor beside him, the pumpkin striking the floor with a thump.

"I have brought you the head of Robert Sallette," said he; "I hear that you have offered a reward of one hundred guineas for it."

"Where is it?" asked the Tory.

"I have it with me," replied Sallette shaking the loose end of the bag. "Count me out the money and take the head."

The Tory, neither doubting nor suspecting, counted out the money and placed it on the table. "Now, show me the

[1] Adapted from *Stories of Georgia*, by Joel Chandler Harris.

head," said he. Sallette removed his hat, tapped himself on the forehead, and said, "Here is the head of Robert Sallette."

The Tory was so surprised and frightened that he jumped from his seat and sprang out of the room, without waiting to get better acquainted with Sallette. The latter turned to the table, pocketed the money, and then quickly departed. He made his way in safety back to his friends.

Three or four such stories illustrative of the conflicts between Whigs and Tories in the South, as in Georgia, in the Middle Colonies, and in New England, would give children a vivid sense of the bitter and cruel struggle between the two parties. This could then be followed by the more general and comprehensive statement given above. The general statement given first without illustration is not very intelligible to children and is of no particular interest to them. The topic is an important one; for the bitterness and long duration of the war were largely produced by the great number and influence of the Tories or Loyalists.

The solution of this problem of properly combining the so-called abstract and concrete thought materials in instruction is, in our judgment, vital and fundamental. It controls the selection and mode of treatment of subject-matter in every important unit of study. Whether we are dealing with a process in arithmetic, an idea like representative government in history, a geographical topic like the Erie Canal, or the life history of a tree or animal in science, the main question to be asked may be thus stated, — What facts, illustrations, and other concrete data must be brought together, and how should they be organized

so as to bring out the general notion or concept at the basis of the topic?

In approaching a new and important topic in any study this problem of choosing and grouping the illustrative facts and data so as to reveal the general truth or concept meets us squarely at the doorway and must be dealt with. During the past two years, with a select body of vigorous and earnest teachers and with this purpose clearly in mind, we have made the attack upon a considerable number of large topics in several school studies, our purpose being to give to each large topic an adequate treatment, i.e., a proper combination of concrete and abstract. In every case, without exception, we have been astonished at the magnitude and difficulty of the undertaking. We have tried such topics, for example, as the Erie Canal, the Congo River, the Himalaya Mountains, the White Mountains, Irrigation in the West, the Columbia River, the Desert of Sahara, Steamboat Navigation on the Mississippi River, the Purchase of Louisiana and Westward Expansion, the Town Meeting and Self-Government in the Massachusetts Colony, Burgoyne's Campaign, etc. In each case the difficulty consists in determining what and how many concrete data are needed to organize it so as fully to clarify a definite concept or general notion. In each case this has proved to be a strong problem demanding first-class ability in organization.

Our recent writers on education have done little to help us upon this vital and very difficult point. They

have given us no end of general psychological advice about the concrete and the abstract, about principles of classroom instruction, but they never apply these principles themselves to a particular topic. This has not appealed to them as a real problem for the thinker. It seems as if they had come to the brink of a chasm and then retreated without descending into its depths. It reminds one of the old story of the mice proposing to bell the cat.

Our experiments with this problem seem to result in two surprises, pointing out the main difficulties. First, it requires a much larger collection of excellent concrete or illustrative material to give the proper setting and illumination for an important concept than we had supposed; secondly, the organization of these concrete data so as to give a strong sequence in the progressive thought development proved difficult beyond all expectation.

Writers on the general theory of education and on principles of class instruction have commonly assumed that it is first necessary to state clearly the principles that govern in school instruction and then leave it to class teachers to apply these principles to any particular subject-matter. The result seems to be that the general theorist never gets into his real problem, where the main difficulty lies. The careful selection of first-class material in the studies and the adequate organization of this material around important thought centers so as to get all the needed facts and data into shape before the actual work of teaching begins is a

vital problem which our pure theorists have not even touched. It is by the practical solution of these definite units of study worked out in subject-matter, and by this alone, that we can determine the proper combination of the concrete and abstract in class instruction. On the other hand, classroom teachers have not been able to solve this problem for several reasons: (1) they are lacking in a knowledge of sound theory; (2) they are lacking in the detailed knowledge necessary for a rich and fruitful concrete treatment of big topics; (3) the textbooks and prevailing modes of instruction mislead them as to the amount of concrete data necessary to the adequate treatment of a topic; (4) they are not trained in this difficult art of organization. The result is that one of the most vital and difficult practical problems at the very basis of our actual school work has been neglected, or to say the least, very inadequately worked out.

The development of our whole course of study is halted at this point for the present, waiting for some one to step in, endowed with a double portion of combined theoretical and practical sense, who will attack this difficult problem in the schoolroom and in the very subject-matter of school studies. A complete, rich, and detailed or concrete knowledge of the important topics in school studies will be an indispensable equipment. In this serious matter our theories have fallen short, and they will continue to fall short. Somebody must roll up his sleeves and come into close quarters with the full subject-matter of studies in the

classroom with children, i.e., with all the facts and realities before him. In this way an intelligent and resourceful teacher and thinker may find out what the trouble is with our present course of study. He may also find the remedy. In this way we may strike at the center of one of the most difficult and important problems in actual instruction, i.e., the proper combination between the concrete, illustrative facts, and the central ideas or concepts around which these facts must be organized.

Illustrations of too abstract modes of teaching

1. There is a marked contrast between the usual condensed textbooks in history and geography, and the supplementary readers in the same subjects. The latter are filled up with interesting, picturesque details and illustrations in a lively style, often seasoned with humor and personal traits, curious social customs, and things which are even outlandish and remarkable. The great demand for such lively supplementary material is a direct proof that the textbooks are dull and abstract and need a reinforcement of the concrete.
2. We are all familiar with the fact that dry sermonizing on abstract theological subjects causes the church pews to remain empty. Successful clergymen, on the contrary, abandon purely doctrinal sermons and illustrate great scriptural truths freely from modern life, from good and evil as seen in business, on the streets of cities, in travel, and in home and school.

3. We now find it necessary to collect physical maps, pictures, stereographs, lantern slides, typical products of foreign lands, museum collections, science materials, and a great variety of illustrative concrete material for the purpose of reinforcing the too abstract textbook matter. In the same way dramatization is designed to strengthen studies in literature.
4. We often notice a strong tendency in adults to think in abstractions and to discourse about things from the standpoint of their matured experience. Many preachers cannot talk successfully to children for this reason. Even the appropriate language fails them for expressing their thought to children.
5. Pedagogical writers are in most cases needlessly abstract, almost as if they were determined to give teachers a standing and unmistakable illustration of wrong modes of teaching; e.g., Rosenkranz, Froebel, and Herbart among the Germans. Some of our leading American writers are likewise abstract in style. In many cases these writers are so abstract in their thought processes as to require an interpreter. Educational writers ought not to make this mistake, because they thus strengthen and perpetuate some of the common mistakes and blunders of teachers.

Examples of excessive emphasis upon the concrete

1. In primary reading bright-colored pictures are sometimes used so profusely as to draw children's attention away from the essentials of reading, word-study, phonic drills, etc.

2. In primary number work children are sometimes kept too long working with blocks, splints, and counting-material. They should soon lay these objects aside and think and memorize number facts and relations.
3. Public lecturers sometimes overload their addresses with anecdotes and humorous episodes to the neglect of more serious thought.
4. Boys and girls frequently become absorbed in the reading of interesting and lively story-books, such as the Henty books, the Alger books, and others of like character, to the neglect of their more serious studies and of other books requiring vigorous thinking. Even adults sometimes dissipate their thought energy too much by reading in a hasty and careless way for mere entertainment.
5. Our modern picture shows give us a strong illustration of the excessive use of the concrete in spectacular displays, rapid movement, exciting dramatic action, and often on trivial subjects. The picture show, properly organized to illustrate and bring out the sense of important topics in geography, history, and social life, is very valuable.

Examples of a proper balance between concrete and abstract modes of thought

1. A poem like the *Village Blacksmith* of Longfellow, Bryant's *Waterfowl*, Lowell's *Vision of Sir Launfal*, Browning's *Pied Piper of Hamelin*. The universal popularity of such selections as adapted to school

purposes is proof of the right combination of these elements. Great writers in their best books are apt to hit this combination.

2. In the Book of Proverbs the most striking and interesting passage is the description of a virtuous woman in the last chapter It is in fact a remarkable poetical picture, beautiful in its simplicity and concreteness, one of the distinctive products of great world literature. The Proverbs, themselves, though keenly significant to adults, are less concrete and effective. The same judgment may be passed upon the last chapter of Ecclesiastes, which contains the remarkable poetical imagery descriptive of old age.
3. In the teachings of Jesus, including the parables, the conversations and the Sermon on the Mount, we find a combination of the simplest concrete illustrations and profound truths such as can scarcely be discovered elsewhere in literature.
4. The use of biographical stories of American history in intermediate and grammar grades is a superior means of combining the concrete of individual experience with the great representative ideas. In the personal experiences and character of William Penn, we find the embodiment of the commanding ideas of liberty of conscience and religious toleration; John Winthrop is a type of intelligent Puritanism; Samuel Adams is the impersonation of the spirit of '76; Webster was the representative of the great idea of unity among the States. These and other

striking characters make historical ideas real and significant to us.

The following narrative of the plans and efforts for putting steamboats on the Ohio and Mississippi Rivers shows how much descriptive and concrete material is needed in order to bring out the full meaning of such a topic.

STEAMBOATING ON THE OHIO AND MISSISSIPPI RIVERS

Outline of topics

1. Fulton and the Clermont.
2. The problem of putting steamboats on the Ohio and Mississippi Rivers.
3. Fulton and Livingston send Roosevelt down the Ohio on a flatboat.
4. Roosevelt's report and the building of the New Orleans.
5. Roosevelt's trip by steamboat from Pittsburg to Louisville.
6. Passing the falls and down the river to New Orleans.
7. Growth of steamboat traffic on the Western rivers.
8. Development of shipping in the Great Lakes. Comparisons.

1. Robert Fulton, the inventor of steamboats, had his early triumph on the Hudson River. After his first success in building the Clermont, the steamboat which made the famous voyage from New York to Albany, in 1807, Fulton began to think of building steamboats for the Western rivers.

2. The Mississippi and its large branches, the Ohio and Missouri, offered a far larger and more important system of navigation for steamboats than the Hudson and other small rivers in the East. Fulton knew that if he could put steamboats on the Mississippi, the results would be of immense importance for commerce. Heavy freight was easily floated down the Mississippi from Ohio, Illinois, Kentucky, etc., on flatboats, but, on account of the swift current, these boats could not be sent back upstream. The only way to ship freight up the river from New Orleans was by keel-boats, which were poled upstream, slowly and with great difficulty, by keel-boatmen. It was a slow and expensive method.

The difficulty of propelling a steamboat against the swift current of the Ohio or Mississippi was also much greater than on the Hudson. There is but little current on the Hudson on account of the tide which rises daily nearly to Albany. Indeed, it was very doubtful whether the steamboat could make headway at all against the swift and powerful currents found in many parts of the Western rivers. It would be a very expensive and doubtful undertaking to build the first steam-vessel to try its chances in such waters. The cost would be about forty thousand dollars, and people were not in haste to spend so large a sum in such an uncertain project. The engines required would be much more powerful and costly. Machine shops for building engines and boats for such work were not then found along the Western rivers.

3. Mr. Fulton and Mr. Robert Livingston, of New York, who had worked together in building and launching the Clermont, decided to make a careful examination of the currents of the Western rivers before entering upon the project of building the first steamboat for the Ohio.

In the spring of 1809, they sent Mr. Nicholas Roosevelt to Pittsburg, with instructions to make a voyage down the Ohio and Mississippi Rivers, study the currents, eddies, sandbars, and other obstructions of navigation, and report to them later the actual difficulties to be met.

Early in the spring Mr. Roosevelt and his young wife reached Pittsburg, where he at once began the building of a flatboat with which to make the journey down the rivers. When it was completed, they embarked for a long and tedious journey of six months to New Orleans. Mrs. Roosevelt describes it as follows: —

"The journey in the flatboat commenced at Pittsburg, where Mr. Roosevelt had it built. There was a huge box containing a comfortable bedroom, dining-room, pantry, and a room in front for the crew, with a fireplace where the cooking was done. The top of the boat was flat, with seats and an awning. We had on board a pilot, three hands, and a man cook. We always stopped at night, lashing the boat to the shore. The rowboat was a large one, in which Mr. Roosevelt went out constantly with two or three of the men to ascertain the rapidity of the ripples or current. It was in this rowboat we went from Natchez to New Orleans with the same crew.

We reached New Orleans about the 1st of December, 1809, and took passage for New York in the first vessel we found ready to sail."

At Cincinnati and Louisville and other cities Mr. Roosevelt was received in the most friendly manner. But when he explained to the merchants and business men his purpose of building a steamboat to travel up and down these rivers, they could not help smiling at such a foolish notion. The old pilots and boatmen who had spent their lives on the great river and knew by hard experience all its freakish ways, made it plain that they considered Mr. Roosevelt an escaped lunatic. But he went on about his business without heeding their jokes. He even made contracts with men along the river, who owned coal-mines, to pile up coal on the banks at various points for use by the steamboat which he proposed to build the following year at Pittsburg.

4. When he got back to New York and laid a full report before Mr. Fulton and Mr. Livingston, they all agreed that a steamboat could be built to travel both ways, up and down stream, on the Mississippi. Mr. Fulton worked out complete plans and all the details for the construction of the boat, and for the building of the engines. Having studied out these plans with great care, and with full advice from Mr. Fulton, early in the spring of 1910, Mr. Roosevelt and his wife went to Pittsburg.

He at once made preparations for the difficult work of constructing the first steamboat on the Ohio and Mississippi. At a level spot below the bluff by the river-bank, and near an iron foundry, he laid down the keel of the new vessel. The boat was to be one hundred and sixteen feet long, with a twenty-foot beam, and the engines were made more powerful than for the Clermont on the Hudson, because of the strong current on Western rivers. There was no suitable lumber at Pittsburg for such ship construction, so workmen were sent up the river to cut down trees from the forest and find the ribs, knees, and beams required. The logs were floated down the river to the shipyard, where they were sawed up into boards and timbers in the old-fashioned sawpits. They did not wait for these timbers to become seasoned. Ship carpenters and machinists had been brought from New York, as there were no workmen at Pittsburg who could

do this kind of ship-building. Pittsburg at this time did not have suitable shops for doing the required ironwork.

Several floods in the river at Pittsburg covered the shipyards and nearly floated the new boat into the river before it was finished. But in spite of all difficulties, the vessel was completed in September, 1811, and launched. The name "New Orleans" was given her, but many people feared she would never reach the city of that name.

Mrs. Roosevelt, in spite of the fears and forebodings of her friends, was determined to go on the first voyage down the river with her husband. Her friends were so anxious to prevent her from going upon this dangerous voyage that they threatened to imprison her and keep her safe till the boat had departed.

5. After a trial trip in the Monongahela, in which the little steamer moved upstream and was easily managed in the current, a crew of fifteen people, including captain, engineer, pilot, cook, and workmen, was secured, and they embarked for the trip to New Orleans. A great crowd on the banks cheered them as they started, and soon the boat was making eight or ten miles an hour downstream. The engines worked smoothly, and the boat was easily guided in the current by the pilot at the wheel. "Mr. Roosevelt was too much excited to sleep on the first night of the voyage, but paced the deck or stood or sat near the pilot from evening until morning." The second day they reached Cincinnati and were greeted by old acquaintances made in their former flatboat trip. "Well, you are as good as your word," said some of the visitors, "you have come in a steamboat, but we see you for the last time. Your boat may go down the river, but as to coming up it, the very idea is an absurdity." [1] On the fourth day out from Pittsburg they reached Louisville, where a public dinner was given them, although most people believed that it was the last steamboat that would be seen on the upper Ohio.

Mr. Roosevelt also gave a dinner on the boat. "While the feast was at its height there was a rumbling that brought everybody to his feet and caused a rush to the deck. All the guests thought the steamer had escaped from her anchor and was drifting towards the falls of the Ohio, where everybody

[1] Knox, *Life of Robert Fulton.*

would be lost. Their dismay was changed to pleasure when they found she was steaming up the river, and as she warmed to her work and increased her speed, they found themselves carried more rapidly than they had ever traveled before on water. Many of the incredulous were thus convinced of the success of their enterprise, and faith in the steamboat was greatly increased.[1]

At this time the Ohio was at low-water stage, and boats could not pass over the falls at Louisville. They were thus compelled to wait for a rise of water in the river. During this period of waiting, Mr. Roosevelt took a return voyage up the river to Cincinnati. When the steamboat reached Cincinnati, the people were still more astonished, as they now perceived that such a vessel could steam up the river against the current.

6. Returning to Louisville, a rise of the water in November made the passage of the boat down the rapids and falls possible. But it was dangerous, as there were but five inches' depth to spare. They engaged a special pilot, and putting on all steam, made a swift dash over the falls. "Rocks rose on either side of the channel, the water dashed in spray on the deck of the boat, and sometimes the New Orleans seemed to pitch forward, as though about to be swallowed up. Every one grasped some part of the boat for safety, and even the big Newfoundland dog shook with terror as he crouched at the feet of Mr. Roosevelt. It was 'une mauvaise quart d'heure,' as the French say, but it was well and swiftly over. The danger was passed and the New Orleans rounded to at the foot of the falls, where they discharged the pilot who had accompanied them through the dangerous channel."

According to the agreement of the year before, Mr. Roosevelt found the coal ready, "and took on as much as the boat would carry. When this was exhausted, he took in wood wherever he could find it. At least once in twenty-four hours the boat stopped for wood; there were no wood-yards then as in later days, and in nearly every instance the work of cutting and preparing the desired fuel was performed by the crew."

Before reaching the Mississippi they were disturbed by the earthquakes which shook the region south of Cairo on both

[1] Knox, *Life of Robert Fulton*.

sides of the river in the fall of 1811. The earthquake shocks continued for many days and nights. A comet was also seen in the sky and the people were afraid and superstitious. "At some places where the boat stopped for wood, the Indians came out and talked, by signs and a few words of English, with the men. They seemed to believe that the steamboat had some connection with the comet, as the sparks from the chimney bore a marked resemblance to its fiery tail. They also attributed the smoky atmosphere to the steamer, and thought the earthquake was caused by the beating of the paddles." [1]

In spite of all these fears and difficulties the New Orleans made its course successfully down the river to Natchez and then to New Orleans. It was then put on regular runs back and forth between Natchez and New Orleans, and was the first steamboat to make regular trips on the Mississippi. It was soon followed by other steamers.

7. The Enterprise was the first steamboat to make the whole journey up the river from New Orleans to Pittsburg in 1815. It was an event for public rejoicing at Louisville and Pittsburg. During the next twenty years steamboats became numerous not only on the Ohio, Mississippi, and Missouri Rivers, but on many smaller tributary streams in the West. The boats were flat-bottomed and had a light draft —in smaller steamboats, not more than a foot and a half. Steamboat traffic on the Western rivers was at its height between 1850 and 1860. At that time there were more than eight hundred steamboats on the Mississippi and its tributaries. The largest of them could carry a cargo of three thousand tons besides several hundred passengers.

After the Civil War, steamboat traffic on these rivers decreased and in the last few years has been unimportant. At the same time the railroad traffic has greatly increased and has largely taken the place of water traffic.

8. On the Great Lakes the first steamboat appeared at Buffalo in 1818. It was called "The Walk-in-the-Water." In 1832 the first steamboat reached Chicago. With the opening of the Erie Canal in 1825 the commerce of the Great Lakes rapidly increased. It has gone on increasing from year

[1] Knox, *Life of Robert Fulton.*

to year till it is now of vast importance. The vessels on the Great Lakes have a deep draft like those on the ocean and are built of steel and iron like those in the ocean trade.

The products carried on the Great Lake vessels are chiefly iron ore, lumber, grain, and coal, and an extensive passenger traffic has grown up in the summer-time. At Detroit, Cleveland, and other Lake ports extensive shipbuilding yards have been established and a large number of big lake vessels are turned out every year.

It is of interest to consider why water traffic has continued to increase rapidly on the Great Lakes while it has almost disappeared on the rivers.

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II. FORM AND CONTENT

The old saying "the letter killeth but the spirit giveth life" expresses the sharpest contrast between the two things about which the schoolmaster is deeply concerned. All thought must express itself in some form or come to nothing, and a form that expresses no thought is worthless. Thought and form, therefore, should always be found close together if not in absolute union. A complete divorce between the two is impossible.

Man has invented and slowly brought to perfection the forms or symbols through which he now expresses his thought. First of all is language in its many phases. The formal systems for expressing ideas are among the

most remarkable products of man's invention, as alphabets in writing or print, notation in mathematics and in music, chemical symbolism, short-hand, punctuation, etc. So indispensable are these forms or symbols in all thinking, and in communicating thought, that great importance has been attached to their mastery and proper use. Practical people and business men have come to judge a child's success in learning largely by his mastery and use of symbols. It is not strange that some schoolmasters followed this lead and gave undue emphasis to the mere forms and symbols of knowledge. The ability to write and spell and read and cipher was long regarded as the essential part of an education. But this tendency to the mastery of forms and of formal arts can be easily overdone.

The history of schools and of courses of study during the last three hundred years demonstrates a constant and powerful tendency toward one-sided formalism, especially toward linguistic forms, grammar, etc. The reformers have fought against this narrow routine, and in recent years with increasing success. There has been, thus, an age-long quarrel between those who favor studies of a formal type and those demanding a rich thought content in school subjects. Whole systems of education have been strongly tagged with one or the other of these features. In all sound education one would naturally think that these two essential elements, form and thought, should be closely combined, and we may well be disappointed at this universal tendency in schools to run to extremes and to separate

them as if they were hostile to each other. In all studies a close combination of these two elements should be earnestly sought. In superior literature and in fine art, the two elements are well balanced and combined. The perfection which is the supreme quality in literature and art is the masterly union of form and thought. In human behavior at its best, we likewise find this intimate blending of idea and form, whose proper combination gives us good manners. The ideal result to be aimed at in all conduct is, as far as practicable, a proper blending of form and thought.

The older course of study known to our fathers, by its emphasis of reading, writing, spelling, arithmetic, and grammar, was predominantly formal; our recent course has been growing richer in the thought content of literature, geography, history, and of science, with perhaps some neglect of form. On the question as to the relative values of the older formal studies and of the newer thought studies, educators have been at variance. The conservatives emphasize the traditional form studies, and are suspicious of the new subjects. Progressive teachers have thrown themselves with zeal into the superior thought content of the new studies, and sometimes ridicule the small pedantry of the old spelling, writing, reading, and grammar.

In the actual practice of the schools a sharp conflict of opinion still prevails as to whether form or content should take the lead in the early teaching of reading, singing, writing, map-drawing, and language. Some still insist that the elementary forms must be first mas-

tered, and that a separate period of preliminary drill must be allowed to the mastery of these symbols and forms. In their opinion, the transition to richer thought material comes later. Others have insisted that interesting and valuable thought must predominate from the beginning, and that the necessary forms and symbols can be taken up and absorbed incidentally into the thought studies. Thus isolated and preliminary drills on forms are not necessary. A large amount of ingenuity has been expended by primary teachers and by thoughtful experts in pedagogical science in illustrating the two sides of this controversy. The two views have been drawing closer together and form and thought have been brought to a more intimate relation. The result so far is not a decisive victory on either side, although great progress has been made toward the thought enrichment of primary studies. Some of the crude, old-fashioned formal drills have disappeared. At the present moment improved formal drills are maintaining themselves with good success in the schools. These formal exercises are being systematized and reduced to their lowest terms. At the same time vigorous thought matter is brought into the closest possible relation to these essential drills. When the formal element has been reduced to a minimum, — e.g., when we get phonetic spelling, giving a child independence in learning to read, — there will still remain a difficulty in adjusting form to thought, demanding skill upon the part of the teachers.

This controversy between the opposing advocates

of thought and form is a basal difficulty that extends into all studies in higher and lower schools. For example, the question is constantly rising, Shall we require children to use correct forms in English in all studies when they recite? On this point teachers always fall into dispute. It does not seem possible to give this question a final and positive answer, because it is a matter of close and tactful adjustment. Good English is a thing to be striven for in every recitation, but careful teachers are willing to overlook some errors of speech if they can get children to think vigorously and to speak, in the main, correctly. The standard of excellence must be relative and changing. Children are in the process of attaining power of thought and of language fit for its expression. It must be more or less a field of compromise and ready adjustment, and the teacher is called upon to mediate constantly between the two requirements of correct thought and correct speech. The teacher is not the one who should take extreme grounds on either side of this issue. Perfection is not gained at one bound, but by steady, persistent, and reasonable pressure on both points.

The history of education shows that educators at times have gone to a ridiculous extreme on the one side of formalism, illustrated by Latin as treated in secondary schools. In recent years there has been a decided swing of the pendulum in the opposite direction and a consequent neglect of form. As a result correctness and purity of speech are not a mark of our times. The tendency toward formalism is a marked trait of human

nature in law and religion as well as in education. Religion flows into creeds and rituals and formal patterns of worship. Christianity has found it necessary, in order to save itself from lifeless formalism, to return again and again to the original sources of spiritual power and to break up old forms. Law ever has a tendency to petrify into a series of precedents, fixed statutes, and constitutions. But the basis of both religion and law is a spiritual energy which constantly modifies the old forms and recasts them into the new. Good government must constantly provide for a readjustment of old forms and constitutions to the new and growing spirit of the times. Education must daily redeem itself from this tendency toward formalism. While the teacher, therefore, should thoroughly discipline children in the correct forms of expression, his business is first of all to arouse thought, to vitalize a child's mind with ideas. The two must be worked in constant relation to each other and brought into a strong unity, because neither can be brought to a proper degree of perfection without the other.

The thought enrichment of the common-school curriculum in recent years has come from all the main reservoirs of knowledge, from the nourishing literature of all countries, from nature-study and applied science, from the industrial and mechanic arts, from fine art and music, from the history of America and Europe, and from fruitful biography. The modern school is rich in practical and useful knowledge; it abounds, also, in the choice literary and art products

of many lands. This extraordinary enrichment might seem, at first glance, to have pushed the formal studies to one side. Not at all. Observe only the variety of studies and exercises in the school to-day whose one direct purpose is to master the English language as a means of expression. The list runs as follows: —

Learning to read in primary grades. This requires about three years of steady effort. It should be combined with story-telling and literature.

Language lessons, extending through six grades.

Writing and printing, long-continued motor exercises in mastering forms.

Spelling and punctuation and readiness in use, drills, etc.

Composition exercises in all grades and theme-writing in upper schools.

Phonics, careful and systematic drills and applications.

Dictionary or diacritical markings, abbreviations and their constant use.

Grammar, especially in grammar grades. Correct speech based on grammar.

Rhetoric and versification. Finally, attention to language in all studies.

To these may be added the symbolisms used in chemistry, arithmetic, and algebra, and in musical notation, with their exercises continuing for years.

In addition to this, every special subject has its own peculiar technical phraseology which must be mastered while working at its thought content; e.g., special

and technical terms in botany, physiology, chemistry, music, drawing, geography, etc.

Such a survey of the actual situation reveals to us the overwhelming importance of the formal element in our common-school education. The great problem is how to economize time and effort in the mastery of these forms, and at the same time to allow the thought element its rightful predominance in studies.

The inherent difficulty lies in the fact, first, that the mastery of forms for ready use is in itself a very serious undertaking, and, second, that the acquisition of new and difficult trains of thought is an absorbing intellectual effort which tends to monopolize attention. These two modes of thought are also somewhat oppositional in quality, and to combine them both in one mental act, so complicated and difficult, requires a decided stretch of mental effort. It means the doing of two diverse and strenuous things at the same time. In his progressive advance into studies, the child is constantly facing this requirement to form new, difficult, and complex habits of thought. The child and the teacher, too, are tempted to separate these difficulties and master them one at a time. But it is dangerous to divorce two things that belong so close together. The moment we set one of these things off by itself and try to master it, we discover that we need the other. Thought cannot travel far without correct form to lean upon. Again the learning and drill upon forms, without inspiring thought, quickly degenerate into dull and formal routine. The child must be constantly facing both these

difficulties, and the problem for the teacher is how to emphasize both alike, and how to bring about a constant interplay between thought and form, so as to produce a complex habit, namely, the expression of correct thought in correct form.

The teacher is the one who must be clearly conscious of this aim, and set his purpose and organize his means to bring about this result. A narrow partisanship leaning toward formalism, and a brusque contempt for correct forms and modes of expression on the assumption that thought is the one essential thing, are alike repugnant to that rational and liberal spirit which should characterize the teacher. The teacher cannot afford to be a stubborn and illiberal partisan in such controversies. Practical education is so full of these dualisms that it furnishes frequent and easy opportunity to pick quarrels if one is so disposed. But the teacher can hardly afford to waste his energy and spoil the fruits of education in such disputes. Partisanship may be permissible in politics and in some other callings, but in education, breadth and liberality of mind, combined with complete and thorough mastery of both sides of fundamental issues, are necessary to an educator. The problem for the teacher lies in developing and organizing harmony out of such diverse and seemingly opposing tendencies. The well-trained child is the expression of this harmonized result.

Cases of marked tendencies toward formalism

1. Excessive drill on the careful verbal analysis of problems and processes in arithmetic in intermediate grades. The exact memorizing of long rules, governing the processes in arithmetic, sometimes before the processes themselves are clearly illustrated and understood. Such exercises are vexatious and almost fraudulent.
2. The old alphabet method of learning to read still used in some schools. A simple, well-organized phonetic method, on the other hand, which enables children to help themselves, is a pronounced aid in gaining the power to read.
3. The oral spelling of rare and difficult words, often without a knowledge of meanings, is a waste of time needed for better purposes.
4. The humdrum reading of selections from the reading-book without clear thought and vital expression. Such work is listless and unintelligent.
5. A grammatical drill and routine in Latin which pays little attention to the content of literature. Grammatical parsing and construing in English is often carried to excess.
6. Learning and locating many facts in geography with little sense or meaning. The same with mere facts and dates in history. Fact-cramming in any subject, without developing intelligence, is essentially a formal, empty exercise.
7. The memorizing of proverbs, poems, songs, hymns,

catechisms, and classifications which do not appeal to a child's intelligence or sense of values, is irrational and conducive to thoughtlessness and dullness.

8. The forms of politeness, cultivated without the spirit of kindness and good will, suggest that formal education easily becomes false and hypocritical.

Instances showing neglect of forms and over-emphasis of mere thought and content

1. Children's common use of faulty and ungrammatical English in reciting their lessons. They are in need of more specific, practical language drills in correcting common faults, and they should be held to higher standards of correct expression in all studies.
2. Teachers and children often are careless about correct and exact phraseology in arithmetic. Such slovenly and inaccurate language must be a mark of careless thinking. It shows a low standard and loose habits of thought.
3. For lack of phonetic drills, children fail to speak with distinct articulation, and with correct utterance of vowel sounds. Final consonants and short vowels are slurred and neglected. Teachers, in common with children, are untrained and negligent.
4. The careful, formal outlining of oral lessons in geography, history, and science, showing significant main headings, is often neglected. This group-

ing and organization of thought material in well-selected, well-expressed headings is necessary as a basis for good mastery and reproduction. Otherwise oral lessons are loose, careless, and incoherent. Simple, strong, formal outlines are needed.

5. The essential forms of letter-writing, paragraphing, capitalization, abbreviations, correct spelling of common words, and clear, legible handwriting require in many schools more definite attention. In these things children are not brought to standards of form.
6. The English language is carelessly and often erroneously spoken and written by many who have completed courses even in our higher schools (not to mention slang and vulgarisms). In some cases this appears as a mark of intellectual degeneracy among people of education.
7. Roughness, crudeness, and lack of polish in manners are regarded by some persons as a mark of independence and originality.

CHAPTER VIII

CLASS INSTRUCTION AND INDIVIDUAL INSTRUCTION

One of the perplexing problems for a teacher in any school is that of combining class instruction with a proper regard for individuals. Most of our teaching is conducted in classes and has strong elements of the social spirit. There is coöperation and mutual helpfulness in a well-conducted class, especially where freedom of discussion and interchange of thought prevail; where honest inquiry can be made and fair and friendly criticism exercised. The discussion of a difficult problem from various points of view, and as influenced by different temperaments and modes of judging, when conducted by a well-poised teacher, is a good training in deliberate and balanced modes of thinking. The suggestions of one mind are helpful and broadening to another.

There may be also a natural, healthy social rivalry. The spirit of emulation stimulates effort. Even debate may push one into more careful and exact thinking and arouse the mind to more energetic action. The opposite ways in which different minds approach and appropriate a new subject are mutually suggestive and corrective.

The guidance of the teacher is necessary to hold the discussion within proper bounds. Questions and criticisms and rebuttals are necessary to expose fallacies.

But the different students may contribute much to the proper survey and balancing-up of the subject. In these various ways a judicious teacher can train children in the organization of new thought material, can bring them to a proper grouping of the facts and to logical modes of reasoning upon the facts. In such competitive and coöperative discussions a whole class may be trained together into correct modes of thinking and into right habits of study.

In reading-lessons, the entire class may become a critical and receptive audience, and each reader in turn is responsible for making the thought of the book stand out in clear and interesting presentation. In discussing literary selections, there is a wide range of fruitful interpretation and of social application. Æsthetic and moral ideals are presented in striking imagery, to which the united social spirit of the class may respond. In dramatization, also, the coöperative and class spirit is especially called into play.

Music is distinctively socializing in its effects. It awakens common emotions and sympathies, as in patriotic and home-loving songs. The rhythm and harmony of music bring all minds together into one tempo. The modern rhythmic movements and folk-songs are having a pronounced influence in giving children easy and flexible manners and a happy social spirit. Many of the school games, played by classes, are helpful in the same way. Class gymnastics and drills are a training in common or joint activity.

In most studies there are interesting and stirring

class exercises which develop enthusiasm and strong mental effort. Rapid concert drills in phonics, in oral arithmetic, in geography and spelling tests, in repeating memorized selections, in free arm movements in writing, and in various speed tests are invaluable means of giving tone and thoroughness to class-work. A reasonable amount of friendly rivalry in such tests is legitimate and even helpful in the growth of social spirit. In class instruction the teacher becomes an organizer of social spirit, both in the effort to discuss and illuminate valuable topics and also in the varied common drills and rivalries of the school program. Class instruction is based upon the common feelings and impulses of human nature and upon the similarities in mental processes. It unites people along lines of thought and sentiment where they harmonize easily and work together to a common result.

The smooth management and direction of a school depend upon the leader's tact in properly touching and unifying the scattered personal elements so as to bring them into sympathy and coöperation. They are capable of flying to pieces so as to produce confusion. Like a piano-player, the teacher must know what chords to strike so as to bring harmony out of apparent discord. So far as a science of school and class management is concerned, teachers have been left to work out this problem pretty much for themselves. It is a difficult social art, that should be based upon social science. But social science is not yet very clearly and definitely developed. A practical sociology would be

more helpful to a teacher than psychology, because it would explain social spirit in its origin and growth, while psychology deals mainly with individual spirit. Sociology itself is a rapidly developing science, and more recently the aim of education and the function of the school have been set forth as fundamentally and chiefly social, i.e., in terms of social science.

It goes without saying that the teacher should be a completely developed, all-round social creature. On this basis and with a clear knowledge of the aim of the school and of the main lines upon which its activities are to be grouped and combined, he may attack the problem of management with some hope of success. It is worth something at least to center the attention of the teacher upon the social forces that must be understood and brought into coöperation to secure a happy organization of school forces.

On the strictly practical side, teaching in classes is one of the large and necessary economies. The teacher who can handle twenty to forty children successfully in one class is doing double, quadruple, yes, twenty-fold duty. He is like a skillful invention that does the work of twenty men. He is an expert in the social manipulation and guidance of a large group of developing minds. All public school systems are based upon this conception of mental likeness and social uniformity as a basis for the grouping of considerable numbers under the tuition of one person. Any other conception of public universal education would be extremely expensive if not impossible.

In two respects the Germans emphasize this social principle in teaching and school discipline more than we in America. First, on the average, they apportion a much larger number of pupils to each teacher than do we in the United States. In 1906, throughout the German Empire, the average number of pupils to each teacher was fifty-eight, certainly a much larger average than ours. Secondly, the extensive use of an oral method of instruction, either by development and discussion or by direct lecture, distinguishes the German schools. Children learn their lesson during the class recitation, from the skillful oral presentation of the teacher, and reproduce it at once under his criticism. This implies confidence in the teacher's power to handle large numbers and cause them to think together and move along together through difficult lines of thought. In America, we are more inclined to allow a child to work by himself at his desk and then come to the class to test out and revise what he has thus learned in his own way. During recent years we have been cultivating skill in oral instruction in primary grades and less in the upper grades. In other words, our instruction is relatively lacking in the social cooperative spirit that marks German schools.

In spite of this, our school systems and all our instruction, in a variety of ways, are taking on a strong community and social spirit. Both our theory of classroom instruction and our practice are developing rapidly toward class unity, to simultaneous class movement and progress, to class spirit and standards.

In the history of education, on the other hand, and in our present practice, we find a marked tendency in the opposite direction — to individualism. Many sensible teachers and thinkers claim that a better form of instruction is the individualistic. On account of peculiar temperament and special mental quality, each child is a problem, requiring particular consideration and treatment. Teachers, like physicians, should diagnose each case, and apply remedies and treatment accordingly. The tutorial system, in private families and at the universities, has been often approved as the most effective form of teaching. It brings the teacher into close personal relation to one or a very few students, so that instruction is adjusted to the individual need. In this connection, by observation and deliberate thought, the instructor may understand the child and think out a suitable mode of treatment. In history there are some famous illustrations of this kind, as in the case of the philosopher Aristotle, who for some years was tutor to the youthful Alexander. Ascham taught the Princess Elizabeth. Herbart devoted himself for several years to the training of three boys in a Swiss family. Fénelon was peculiarly successful in educating the French dauphin. Rousseau's *Émile*, the most famous book on education, is worked out on this plan. John Locke's experience in teaching was gained as a tutor and adviser in English families, and his very interesting treatise, *Thoughts on Education*, is an elaboration of this mode of tuition. At the English universities for centuries,

much of the best instruction has been of the tutorial sort.

This tendency toward individual instruction crops out from time to time as a protest against the strong drift toward uniformity which would construct all children upon one dull pattern. The Batavia plan is a modification of class instruction in the interest of individual capacity, allowing each child to move along in part independently, as his ability and industry permit. Two teachers are employed in one room, one for class instruction, and one for individual attention in the preparation of lessons.

The tutorial plan of instruction is necessarily expensive and aristocratic. It has been in vogue in all countries that possessed a noble and wealthy class. It prevailed in the Southern States before the war. The introduction of a broad public school system, including expensive and well-equipped high schools, has everywhere pushed the tutorial system into the background.

Yet a full and sympathetic appreciation of the individualistic point of view is of high importance. As a rule we are not in danger of giving too much attention to individuals. In the instruction and moral guidance of children it is of fundamental importance to understand and respect a child's individual traits and abilities. The child-study movement of recent years has turned our attention to the physiology and psychology of childhood and youth and to individual defects, abnormalities, and causes of retardation. It

has also encouraged the study of individual children. The pedagogy also of the treatment of defectives is individualistic and throws much light upon school problems. A closer contact with parents in the home and in parents' meetings, and otherwise, will compel us to pay more attention to individual traits. The great stimulus toward vocational education and to vocational guidance which we are now witnessing is a demand for specialization along lines of individual preference and capacity. From this point of view children should be observed and developed with an eye to their future callings and in conformity to their natural ability and tastes. The elective system in colleges had a similar basis and tendency.

It is beyond question that our prevailing methods of teaching large classes cause us to overlook the peculiarities and needs of individuals; that we get into the habit of thinking of children as of average ability and quality. As a matter of fact, the children of an ordinary class are widely and often surprisingly different in ability and temper. In discipline, on the basis of common principles, they require widely different modes of treatment. In scholarly lines, some can easily move along twice as rapidly as others. A few have marked ability in one direction, with compensating weakness in other lines of study. To force all children to move along at one pace is unnatural and arbitrary. It imposes too heavy a burden upon a few and leaves the strong intellects without adequate stimulus to effort.

In the general plan and organization of a great national system of schools, it is important to provide for a gradual sifting-out process by which not only the general culture of all students will be provided for, but strongly marked individual talents and capacities will be discerned, developed, and turned eventually into those channels of specialization where they will reach their full practical realization; just as in France to-day children who show signs of skill and talent in drawing and fine arts are picked out, encouraged, and finally directed to the higher schools of art where they may find means of turning their best talent into the service of society.

Taking education as a whole, therefore, we may conclude that these opposed tendencies toward class and individualistic instruction are of about equal importance. How shall we reconcile and combine two such requirements, that which looks toward the strong social and group spirit in class instruction and that which demands a close and discriminating attention to individual ability (talent or weakness)? In the general management of a whole school and in each classroom this problem becomes very acute. At every moment in a live school we have this double problem on our hands. We are actually dealing with the school whole and with individuals. It surely demands alertness and versatility in the teacher to be prepared at any moment to respond to either or both of these calls. In entering any classroom when the work is on, the first important question or double question is this, Is

there close class attention and coöperation in the work, and at the same time is proper consideration given to children who are careless or peculiar? The instructor's mind must be swift in its movements back and forth between the class effort and the individual mental operations which diverge at various angles from this. Young teachers are at first weak in making this happy combination. Strong, experienced teachers acquire a remarkable versatility and readiness in meeting this double requirement. A very complex habit of attention must be acquired by the instructor, a sort of double or triple consciousness which can take in several diverse things almost simultaneously, — the thought movement of the whole class, the inattentive or careless attitude of one or more persons, the general discipline of the schoolroom, and, perhaps, one or two other diverting circumstances of the moment. Such complex habits of attention and of quick adjustment to a constantly changing panorama of events are high accomplishments acquired only in the stress and struggle of vigorous class instruction. This is but another illustration of the broader scope and keenness of the teacher's mental activity in harmonizing two practical demands which are oppositional in character.

This problem is so fundamental, so difficult, and so persistently present in teaching, that numerous devices have been resorted to so as to meet it successfully. First, the proper organization of the school as a whole (in a graded system) may get rid of many hindrances, as follows: The removal of incorrigibles from the room:

this will give the teacher a reasonable chance to deal with the class; the proper grading of children so as to have those of approximately the same age and ability together; a well-devised curriculum which furnishes appropriate material of study for the children; a recitation room where one is not seriously disturbed by other classes and happenings in the neighborhood; suitable books, maps, blackboard, and apparatus.

With all these conditions favorable, the teacher is in a position to concentrate upon the main problem. In handling any important lesson before a class, he needs such an organization and mastery of the subject that it makes him free to observe the class. With his eyes fixed on a textbook or outline, or anything else, he is not free to exert his personal influence upon the class and to see what is going on.

While the main topics of the lesson are under consideration, the instructor is on the alert to drop a question upon any one who is inattentive or careless. When, because of inattention, a pupil has failed, as soon as the point has been stated again, he should be called upon to reproduce it. Steady pressure upon those who are thoughtless and scattering in attention will bring them into the class movement. When the main line of thought has been worked out, some have mastered the subject, others have fallen behind. Sometimes it is advisable to let the abler ones restate the argument so that the poorer pupils may have a second chance to master it; and they should be called upon at the close to show what they can do. Or the brighter

pupils, who have mastered the subject, may be assigned other tasks at the board or at their desks to employ their time. For slow pupils the instructor needs ready power of concrete illustration, and quick judgment to see where the trouble lies in a child's thinking. Children should be so treated that they feel free to ask questions and to confess their failure to understand.

Keep before children the main line of argument and stick to this in the reproductions, drills, and tests.

Have on hand a good supply of select topics with which to engage the brighter pupils while the slower ones are bringing up their work.

In order to keep up the lively spirit and attention of a class, shift over frequently to a new kind of work. In other words, give spice and variety to the recitation.

At times the instructor should be sharply critical, at other times helpful and encouraging.

Constantly throw responsibility upon pupils for full, clear statements, for reproductions demonstrating close attention, for work properly assigned, and for keeping up standards that are clearly understood.

These are but a few of the suggestions that apply to this many-sided and difficult problem.

In order to simplify the situation for room instruction, an extra teacher is sometimes employed in a school building who will spend the time with special children or groups, giving drills, reviews, and explanations suited to individual needs. In any larger system of schools there ought to be some extra teachers who can devote their efforts to individuals (incorrigibles) and

to small classes that cannot keep their place in regular work. Sometimes the principals of buildings are very helpful in this supplementary work. Some teachers are solicitous in giving helpful direction to special cases before and after school.

One advantage peculiar to German schools is the fact that the teacher has usually (in graded schools) but one class before him, and he can thus aid and supervise children during their study periods. In the city of Mannheim, on the middle Rhine, children are separated into three classes during the third year of school: (1) those of good normal capacity and ability to do strong work; (2) those of mediocre capacity, and others who from any cause have fallen below the normal; (3) those of poor mentality and defectives. A full course of study is worked out for each of these groups (from eight to fourteen). The presumption is that the first or upper class will move on more rapidly than if they were encumbered and retarded by pupils from each of the other groups. In the two lower groups, however, the classes are expected to do thoroughly and well what is assigned to them, because it is suited to their strength. This system of classification has been in vogue for twelve years and is a very serious and continuous effort to deal with this problem of class instruction. The connections are kept open between the three groups so that children may push forward to a higher group, or drop back as need arises.

Conclusion

From this brief discussion it is clear that in adjusting himself to the social and individual needs of a class, the teacher is constantly facing a very difficult and many-sided problem. In preparing himself to meet this problem, he can engage in two lines of study: First, individual child study will broaden his knowledge of boys and girls, and discover to him the variety and richness in human nature. This sympathetic inquiry into the qualities and dispositions and physical make-up of children, together with introspection and revival of one's own childhood, furnishes the concrete basis upon which all broader study of psychology and sociology can be built. Second, school or class social spirit may be made an object of observation and of deliberate study. In fact, no one in the world has a better chance to get at the basal social elements upon which society is founded than have teachers. They should be observers to collect social data and practical thinkers to organize such materials and draw valuable conclusions.

On the ground of these two modes of observation and study, the teacher may then go to work constructively to figure out the main problem — the right combination of individual and social forces in the school program.

PART II

OPPOSING ELEMENTS IN GENERAL EDUCATIONAL PROBLEMS AND THEORIES

CHAPTER IX

ANTITHETICAL ELEMENTS IN SCHOOL STUDIES

I. THE IDEALISTIC AND THE USEFUL

In the curriculum of studies we find deep cleavages which separate the branches of knowledge into opposing groups, At least the representatives of each group are strongly partisan, and demand a monopoly of the educational field for their preferred studies. These contradictory tendencies, which lie in the very nature of different studies, have thrown educators into opposing camps, which have maintained their hostility through centuries of educational history.

Two special groups of knowledge stand out as widely divergent if not directly antagonistic. They are the idealistic and the directly useful.

The idealistic spirit is shown in romance and in fiction. The fairy tales, the old myths and legends; the wonder stories, heroic ballads, and lyric poems; the humorous extravagances of Münchausen and Cervantes, the epic poems and dramas of Homer, Milton, and Shakespeare — all these belong to the kingdom of the imagination. Here truth takes on poetical and sometimes freakish forms, and plays tricks with sober reality. Some teachers have but little appreciation or sympathy for this realm of poetry and idealism. They do not respond to its imagery or partake freely of its

spirit. Darwin confessed in his later years that he had lost the power to enjoy Shakespeare. People of this temper feel, however, that they have not lost much, because a richer and more practical field of study awaits them in natural science, in geography and the useful arts. Exact scientific and mathematical truth based on facts and observed reality is what interests them.

This second group, the useful and realistic studies, includes natural science in field and laboratory, history and civics, mathematics, commercial and industrial geography, constructive work in the shops, school gardening and agriculture, health, hygiene and sanitary science, household arts, useful inventions and discoveries, the biographies of explorers, business leaders, philanthropists, and social reformers, and the arts of reading, writing, and spelling as a preparation for practical life.

These are a few of the really useful and valuable things most deserving of children's mental and physical effort. The course of study naturally divides itself into these two groups, on one side the ideal world of literature and fiction, on the other the practical world of utility.

A large number of teachers, especially in high schools, stand completely immersed in one of these groups of study, and they show but little interest or respect for the other. Some, who have a decided preference for useful knowledge, show a certain inhospitality if not contempt for literature. The lovers of literary culture,

on the other hand, have not tried to conceal their disdain for the narrowly or exclusively practical. It is a great good fortune for anybody, pupil or teacher, to become absorbingly interested in one or the other of these groups of study. Departmental work, even in grammar schools, rests upon the conviction that a teacher will do better work with children who has made an intensive study of one or two branches. In higher schools it is altogether well to be a deeply interested specialist in one branch or group of sciences, and to prefer this.

In the common school, however, we are not trying to develop children into specialists. On the contrary, we wish to broaden children out into full mental and moral stature. The teacher is supposed to be an all-round human being and to develop in children an all-round receptivity; that is, to open up all the main avenues of knowledge to every child. It is questionable whether a teacher in the elementary school should have an exclusive preference for any one study or group of studies; certainly not if he should lack cordiality and respect for other important studies. The whole question must be settled, not by the preferences of the teacher, but by a consideration of the needs of children; that is, what their nature and its best all-round development demand.

Our present course of study is the result of a long historical development. This course, itself, is the expression of the conviction that about equal importance attaches to the purely useful or utilitarian and to the

idealistic studies. We may add that the natural and spontaneous interests of young people seem to indicate that they are quite as much predisposed to idealism as to utility studies. Here again the question arises, Why should there be any antagonism or bitterness between the partisans of these two group of studies? Each of these groups is indispensable to the proper education of a child. A larger conception of utility in studies is needed which will take in and combine both groups into one unified purpose.

A good argument can be set up to prove that in higher utilities, poetry and works of the imagination are quite as useful to men as the commercial and industrial arts. In cultivating the higher feelings, sentiments, and enjoyments of human life, in the moral and social improvement of society, the idealistic subjects of study hold the leading place and are likely to retain it. They express the nobler impulses of human life and the profounder sentiments of human nature at its best.

From the historical point of view there has been an age-long conflict between literary studies and the natural sciences. Since the revival of learning in the fourteenth and fifteenth centuries the natural sciences have been coming more and more into prominence and have competed with steadily increasing success with literary studies for a place in the curriculum. An examination of modern courses of study as historically developed will show that literature and linguistic studies maintained almost a monopoly of school courses for several centuries, but the sciences and other modern studies

gradually crept in until, in the latter part of the nineteenth century, they sprang into full recognition. But while natural science has made a remarkable advance and has gained a large place for itself, literature and language still hold their own; only language study has shifted over to modern literature in place of the ancient. The elementary school in recent years has much enriched its course in English and American literature, and even has taken much from other sources of world literature.

The utilitarian studies at the present moment are coming into still greater prominence by the wide introduction of the industrial arts, of agricultural science, of health and sanitation, of vocational studies, and of commercial branches such as typewriting and stenography. Our education is becoming far more practical in its many-sided bearings upon present life. At the same time the course of study has grown far richer in idealistic or imaginative materials. This signifies an enrichment of the lives of children in both directions. Our schools are in duty bound to furnish all children the chance to expand and develop their natural powers in both these lines of thought. To do this the teacher must be large enough fully to realize the value of each great realm of knowledge. He should feel the necessity for combining them in order to make individual life complete. Conflict and contradiction between these groups of knowledge are out of place. The teachers should enlarge their sympathies and grasp the whole scope of education.

Similar to the above conflict is the contrast between the artistic and the practical in several important studies. Herbert Spencer claims that the ornamental has preceded the useful in the evolution of the historical systems of education. The love of the beautiful and the artistic is deep-grained in human nature and the best exhibitions of art creation have appeared at the high points of civilization in different countries. Drawing for a long time has been the representative of the art idea in the curriculum. The shop-work of the manual arts was first introduced into schools as a practical and useful training.

It is a curious result of the large introduction of the industrial arts in recent years that a new and very important phase of fine art has followed them. The manual arts, which were regarded as strictly useful, have been working over into the arts and crafts, which are strongly æsthetic. The whole range of industrial arts, including woodwork, textiles, clay-molding, and bookbinding, are taking on a controlling art idea. Artistic design is now becoming a superior dominant principle in all this industrial work. That which started out as purely utilitarian has put itself directly under the control of the higher art idea. The drawing and art department in schools is learning to relate itself closely to the manual arts so as to throw art design into all constructions. This union of the two somewhat widely separated departments is not yet effected in many schools, but it is a strong and necessary drift toward a better combination of educational forces. It

will materially strengthen both departments and give them, combined, a powerful influence upon schools and culture. The industrial arts are being elevated into a greater importance in training by absorbing into themselves the artistic sentiment.

The main difficulty is to get teachers who are broad enough in their sympathies and strong enough in their ability to combine two important and contrasted fields of study into one. It is relatively easy to be an expert in the technique of wood construction; it is not over-difficult to master the technique of drawing and elementary art; but to combine these lines of effort and appreciation — the union of the useful and artistic into one constructive product — is a far greater achievement and a more efficient kind of education. The failure to do this is apt to produce an antagonism which takes the place of coöperation between two lines of study that in their nature are already unified into one.

We find, therefore, that this tendency to contradiction among studies where unity and coöperation should prevail, shows itself in two distinct and important phases: —

(1) The idealistic and the useful, or the literary and the scientific.

(2) The artistic and the practical.

The failure to see this larger relation of unity and harmony is one of those signs of narrowness which too often marks the schoolmaster. The important consideration is that these studies cannot produce their proper effect upon the minds of children when those

forces which should work together in harmony are rent asunder and thrown into narrow and foolish antagonism. The one-sidedness and narrowness of the teacher become the one-sidedness and narrowness of the pupils, and error is thus perpetuated.

Another striking contrast found in literary materials is that of

II. THE SERIOUS AND THE HUMOROUS

In selecting materials for school studies the serious and humorous elements should be properly mingled. The two elements are in striking contrast to each other and the humorous side is often neglected. The fundamental tone of instruction should be strongly intellectual and vigorous. It should be thoroughly aggressive, pushing into new fields of knowledge and encountering hard problems and technical difficulties. This requires serious effort and a determined will. The necessity for strong, concentrated attention, for persistent struggle with difficulties, for original thinking power in organizing new materials, the effort to give full expression to new ideas in adequate language, and the power to use and apply new principles to untried situations — all these require a complete and serious absorption in the subjects of study. But many teachers overdo the serious attitude. They are too constantly strenuous. The face, the manner, and the inner spirit acquire a fixity that is too hard and unyielding. The teacher needs above some things a mobility and flexibility of spirit that fits easily into a great variety of moods.

Humor is a solvent of stiff mannerisms. It takes the rigidity and cramp out of one's mental habits. It releases the strain and gets the children back into a wholesome attitude in readiness for a new and stronger effort. Humor is the natural antidote to austerity and harshness.

Two other reasons may be assigned why humor should be a more or less constant ingredient of instruction. The subject-matter that we deal with in studies is often humorous and loses its charm and meaning if not entertained in this humorous temper. Much of the best literature for school reading is funny or mildly humorous; Dickens's stories, for example; also Scott, Thackeray, Warner, Irving, Holmes, Goldsmith, Swift, and many more of our favorite writers cultivate a rich vein of humor or satire. Shakespeare, even in his tragedies, sparkles with fun and banter. He is wholesome in his natural mingling of the serious and humorous in life situations. Another reason is that many children possess a rich vein of humor which the school too seldom knows how to develop and utilize. Some children are natural humorists. They excel in this as others excel in music or mechanics. Why not somehow bring out these talents? They are worth much to the school and to society. I have heard an excellent teacher of arithmetic keep up a running fire of questions and humorous suggestions which did not detract from the mental effort, but kept the children in fine spirit. The teacher should combine the serious and humorous temper and attitude. He should cultivate

the ability to appreciate the funny side of life. It will put him on easier terms with children and with everybody.

The joker is apt to become a bore, and, if he tries to be funny all the time, will degenerate into a clown. It is a task to be temperate if one has a real gift for fun. It is the mingling of the two elements that can give the classroom its best spirit. Lack of appreciation for humor is probably a sign of dullness and of mental obtuseness, of unsympathetic temper. Life itself, outside of the school, demands the mingling of these contrasted mental attitudes. Both the course of study and the method of instruction should partake of the serious and the humorous.

If time permitted, we might take notice of many other contrasts in school studies and programs; the motor activities of the school are apart from the bookish studies. Mental training and discipline are the opposite of the physical. The formal and symbolic studies are distinguished from those showing a rich content. The social studies differ widely from the purely intellectual, like mathematics.

CHAPTER X

CONTRASTS IN CHILD AND IN SOCIETY

I. THE CHILD PHYSICAL AND MENTAL

A GROUP of these contrasts centers in the child himself, and in his reactions upon his environment.

First is the contrast of the physical and mental. The child is the focus of the most inscrutable contradiction, the coming together of the physical and mental in one organism. By some sort of creative act, which psychologists and thinkers have not been able to fathom, the immaterial mind has come into vital relation to the material body and we have a child. We might leave this metaphysical problem for philosophers to puzzle over, but it corresponds exactly to an important educational problem or dilemma which teachers cannot escape. How shall we provide for the proper development of mind and body together? At times they have been thought of almost wholly apart and even regarded as antagonistic.

We usually speak of the physical and mental training as two separate things, each requiring its own particular plans and equipment. Care for physical growth and health makes an interesting subject of study by itself. Likewise mental training is well recognized as an important and distinct field of scientific study.

The schoolmaster has been accustomed to presup-

pose satisfactory health conditions. On this basis he has thrown himself with special emphasis upon the problem of developing the child's mind. This is, indeed, an extensive field in which to operate. It includes not only the intellectual activities, but the feelings and sensibilities, the moral and æsthetic impulses and ideals. It is no wonder that teachers of strong ambition are completely absorbed in directing the mental and moral growth of young people who possess rich and varied mental endowments.

Until a few years ago our psychology and pedagogy were almost wholly given over to a study of these mental qualities and to the branches of knowledge which contributed to their growth and improvement. The schools are still in the main devoted to intellectual and moral training, as shown by their time schedule, textbooks, and courses of study. Many teachers would be surprised, to-day, if told that their time and responsibility to any considerable degree extended to the physical improvement of children. The excessive requirements of mental training have often encroached upon the domain of physical health and well-being. Anxieties as to bodily health, physical growth, proper food and clothing, exercise, and special physical weaknesses and ailments were left exclusively to the home and the physician. Teachers had their hands full with the intellectual and social discipline of the school.

But the traditional attitude of the schoolmaster has undergone a change of late years. Psychology has become physiological. Pedagogy has become in part

child-care from the medical point of view. The growing concern for health conditions in schools has turned our attention directly upon the physical basis of right living. Schoolboards and schoolmasters are summoned to the duty of making full provision for the physical as well as mental needs of children. The roominess and ventilation of schools, even to the extent in some cases of open-air conditions, large playgrounds with full time and equipment for outdoor sports, indoor playrooms, with games, physical movements and dancing, the various preventions of school contagions by expert medical inspections, home visitations by nurses, and quarantine, are becoming acknowledged necessities. They are the inevitable prelude and companion to right conditions for study and mental improvement.

Teachers and parents are beginning to realize that without these essential sanitary and health provisions, a schoolroom of thirty or forty children is one of the most effective organizations in society for collecting and distributing disease. Children are kept in close proximity and contact with each other several hours of the day. If there is any child in thirty families with an infectious disease, he has a chance to distribute it to all these families in a short time. Children are required by law to go to school. Would it be unreasonable to require by law that all schoolrooms should be kept free as far as possible from contagious and infectious diseases, and from unsanitary conditions that impair physical health?

Proper health conditions and sound physical devel-

opment on the one side, and strong mental training, on the other, are not opposites. Yet it is easy to allow one to encroach upon the other till they become antagonistic. In each child they are bound together so intimately as to be phases in the action of one vital organism. Together they constitute a double problem — of such breadth and many-sidedness that the average teacher may greatly broaden his interests and his range of practical knowledge so as to take in the entire situation intelligently and to combine them properly.

Recent psychology has been turning a bright light upon the relations between body and mind. The more closely we examine the brain and the nervous system in their relation to the other bodily organs, the more close and interdependent these relations are found to be. The brain, as the instrument of the mind, is a physical organ and is a center of control for the entire physical organism. The nervous system, in immediate touch with muscles, sensory parts, and vital organs, makes all the body parts the direct agents of the brain and mind. All kinds of skill are at the same instant mental and physical. The basis of all experience and knowledge is found in sensory and motor reactions, which are carried to the mind by way of the nervous system and brain.

Many of the ailments of children in school are due to derangements between the physical and mental activities; or, stating it better, the mental ills are the direct result of physical conditions. The physical ab-

normalities and curable defects of children are being studied to see if, by their removal, mental faults and weaknesses cannot also disappear — and they often do. So inseparable are mental and physical effects that psychologists are baffled in their effort to discriminate between them, and some have become skeptical of any real distinction.

These facts suggest that the theoretical separation of the mental activities from the physical in the minds of teachers is not based upon any real facts in human nature, but is artificial and impractical. At any rate, the teacher must work at his problem from both sides, and must study the physical aspects of a child's actions as carefully and as keenly as the mental. He must watch their interactions to see how they combine in every case to form a larger unit of action — the whole child.

Teachers have too often taken the partial view of human nature, and have even done great injustice to children by insisting upon mental responses for which there was no physical basis. For example, children have been called dunces and dullards because their hearing or eyesight was defective or because they were too sleepy or exhausted to think.

The human being is normally a physical-mental whole, and it is the best interest of this double whole in its unitary action that the educator must conserve. Conditions favorable to proper physical activity and robust health as a basis for mental growth are in our time the subject of widespread interest and experi-

ment. At the universities experimental laboratories for making physical and mental tests are happily in vogue and much time and expense are being applied to this problem. The schoolroom is the place, however, where all these results must be applied, and where teachers should be broad-minded and keenly intelligent to see both sides of a very complex and finely adjusted organism.

The fundamental nature of this dualism between the physical and mental is demonstrated, first, in the very nature of the child, as a combined psycho-physical organism; second, in the nature of the school as a combination of physical and mental problems; and finally, in the structure of society, with its physical and economic basis on one side, and its social and cultural factors on the other. The child is a microcosm in which the whole problem of society and of the universe is reflected.

II. HEREDITY AND ENVIRONMENT

A somewhat different aspect of the study of child nature is suggested by the contrasted words "heredity" and "environment." It has been often debated which of these has the greater influence in determining character. A more important question is, How are they related to each other? If a child's heredity is mainly good, environment or education should strengthen and develop its potential forces. If a child is unfortunate in his heredity, the problem is, How can environment develop his better activities and fortify

him against weaknesses? Bad tendencies may be allowed to disappear for lack of opportunity to exercise them, and better interests and habits may be encouraged till they get a strong foothold.

Some educators have taken extreme views regarding the formative power of environment in shaping character. The tender and susceptible nature of infancy and childhood is a strong point in their argument. The disposition of children to imitate their companions and elders and the readiness with which they take on the social temper and spirit of the gang or group to which they belong is another powerful shaping influence. The standards of judgment and of conduct in the family and community, in the church and social life, are also powerful agencies.

On the other hand, heredity has its tale of woe, its criminal families, its depressing statistics, and also its honorable record of families showing a long line of good behavior. It is a great blessing to have had parents and grandparents of an old stock known for mental, moral, and physical sturdiness.

The educator is here called upon to take a very broad and charitable view of human nature; yes, to exhibit a noble confidence in human kind, even in its unpromising individuals. The law requires all to go to school, and assumes that all are capable of even the best results. Experience also seems to show that incorrigibles, so called, when properly employed in school, shop and playground, guided and controlled by prudent and sympathetic teachers, may be saved from

evil tendencies, and thus guided through the tumultuous years of adolescence into steady good behavior in maturer years. This happens sometimes even when the surroundings of family life are very unpropitious.

In dealing with children from this point of view teachers should acquire the power of judging individual capacity and contradictory traits, with their combination into various types of character. The troublesome cases in particular should be studied and treated individually, the confidence of children secured, and if possible, grounds discovered in which the teacher and children alike may find a basis for encouragement.

Some have gone so far as to assert that the school should so study the heredity and sources of power and weakness in children as to discover what calling they should prepare for. In this sense the school would become a sort of testing-out place to discover what children are naturally best fitted for, and they would be gradually developed in the direction of their appropriate callings. This would give the common school a preliminary vocational tendency.

Without going the full length of this proposal, we must admit that this disposition to study the children's individual peculiarities and special leanings is one of the best means of learning how to bring educative influences to bear upon them. Human nature is many-sided and the resources of educational environment are rich and varied, and teachers should be the agents for bringing them into proper adjustment.

The child with his complex physical and mental

endowment (heredity) is to be adjusted to a very complex physical and social environment. This happens through a long-continued educative process. Parents and teachers alike may exert their utmost prudence and wisdom in combining the diverse and seemingly contradictory elements of the problem.

III. THE INDIVIDUAL AND THE SOCIAL WHOLE

The older definitions of education called for an all-round development of the individual — the harmonious weighing and balancing of the forces of human nature in each person. This was the Greek conception, and that of the Germans a century ago. The physical, mental, and moral powers of each person were to be cultivated, strengthened, and harmonized into the perfection of individual character. Each person was to be brought to the highest excellence of which he was capable.

This emphasis upon individual character also gives scope to marked ability and special talent. Each person should develop in full measure his strong individual traits, his distinctive personality. In this way each would also become of the largest service to society. His special talents would be fully developed and his strong individuality brought out. That society is strong which has a full assortment of strong individualities. Education should not mold all people into a common form. It should encourage individuality. The world would be a dull place if all thought and felt and acted according to a set pattern. Fashion and convention

easily are carried too far. Society needs the stimulation and criticism of numerous reformers: people who are not satisfied with social usage and existing law and custom. Conservatism and "standpatism" would bring society not merely to a standstill, but to a swift retrograde movement if they should entirely prevail.

An inquiry into the characteristics of children will discover the widest variation of individual talent and ability among them. In temperament, in preferences for study, in inherited tendencies, they show everywhere marked special features. The studies of the schools also furnish a variety of material suited to this wide range of special talents. The conditions and resources of the school should be favorable, therefore, to the cultivation of distinct individualities. The course of study itself, by the rich abundance and variety of materials, is a constant admonisher to the teacher not to be narrow and cramped in his attitude toward knowledge.

On the other side, the tendencies of theoretical discussion in recent years have been strongly away from the individual toward the socializing of education. Education has been emphasized as social adjustment, the fitting of a child through training to his social and industrial environment. Our modern society is growing into a very complex organization, and it requires a long training to bring a child to the point where he can react skillfully and effectively to its many demands. Coöperation is now the social watchword, and it is a coöperation based on intelligence and on a great va-

riety of well-developed habits. In social usage, in politics, in business life, in travel and amusement, in the family, in the club, in State and Church, in sanitary and health regulations, in the use of machines and inventions, in a multitude of other ways, a child must become habituated to appropriate social reactions and to intelligent coöperation with many sorts of people.

The socializing principle in education has thus come into high repute. It is claimed that the social principle is adequate to determine the whole course of education; that the criterion by which every phase of instruction and discipline can be judged is its social value; that proper consideration for the individual is gained from the social principle; and that whatever does not range itself under social aspects can be omitted. A strong argument can be set up to show that education can be organized upon a single principle, that of social adjustment.

But there are good reasons for believing that education needs to be measured and judged in its every aspect also from the standpoint of the individual. The sum of all individualities produces the social whole, and what the social whole is, is predetermined by the character of the individuals. How strong individualistic characters are to be developed is one of the most serious problems in education. All of our thinking on social problems swings back and forth between the individual need and the social need, between individual rights and the rights of the social whole.

The individual ego is the center around which new

organizations are constantly attempted. The individual is also a free, self-governing agent, with power to appropriate or reject. He is not and should not be a mere passive something to be acted on and wholly controlled by outside forces. All progress in society must show itself first in individuals, and then work its way slowly and often with great opposition into the larger social body. The established social order is often a very cramping and destructive power exerted against the individual and his rights, and the only safety to society itself is to find individualities strong and numerous enough to take up the battle against social tyranny. It is all right to say that every educational agency must be judged ultimately from its social implications, but it may be said with equal truth that every such agency should also be judged from its effect in the production of strong, distinctive individualities.

It may be said also that the leading representatives to-day of the social view in education are themselves the most pronounced in their individualistic attitude and in their sharp, critical opposition to prevailing social usage in education. They are not at all inclined to adjust themselves to present social conditions and demands.

It has been the fashion for a few years to emphasize social aspects in education, and it is also a strong necessity of our time of rapid development of complex social problems. But the old individualistic view is the essential antidote to extremes in social doctrine, and the educator must be broad enough to take in both

sides of this comprehensive situation. How to harmonize the individualistic and social necessities is the real difficulty. There is no fundamental contradiction, which a broader, unpartisan view may not harmonize.

The tendency toward antagonisms between the individualistic and the social view in education throws into light a fundamental problem not only in education, but in political and social organization for thousands of years. Western civilization, as compared with Oriental, has been strongly individualistic. American history has shown thus far an extreme individualism, from which it is now trying to recover itself. In the history of education since the time of the Greeks there has been a swinging back and forth of the pendulum between the extremes of individualism and social subordination. The Reformation, for example, was a reaction against the obliteration of individualities.

The teacher should possess a clearly defined purpose to cultivate a right combination of individual and social spirit in each child. Some children suffer for lack of social cultivation, being willful or selfish. Others are lacking in independence and aggressiveness, and are too easily submissive.

A society is strong which has a rich supply of pronounced individualities and likewise a multitude of vigorous social organizations in which these individuals coöperate. A personal character is strong in which both the individual and social qualities are well developed and combined. The function of the school is to aid the development of strong personalities, as many of

them as possible, checking willfulness on one side, and strengthening weaker spirits on the other. It draws the more independent characters into harmony with social spirit and it arouses the feeble ones to greater independence and initiative.

CHAPTER XI

THE GULF BETWEEN THEORY AND PRACTICE

One reason why the science of education commands less respect among thoughtful people than may be its due is a too wide separation between theory and practice. Indeed, they are often referred to as opposites. We hear the remark that "Theory says one thing, but practice the opposite." Theory, however, should be no enemy of practice. If we were about to employ an agriculturist to take charge of and manage a thousand-acre farm, we should secure a man who is the best combination of good theory and good practice. A mere theorist without experience we would avoid. An unprogressive farmer would not suit us. If we were engaged in railroad building we should seek a manager of construction who is a scientific expert, and at the same time experienced on the practical side. In all kinds of technical work, theory and practice must clasp hands as closely as possible.

The impractical theorist dwells in a region of abstractions, and even of dreams, and is neglectful of facts and real conditions. The unscientific, so-called practical man is apt to be narrow and hidebound, stubbornly holding to an unthinking routine of familiar experience. He lacks the wider range of scientific ideas, and the progressive views by which he might reinforce his practical experience.

One might imagine that controversy between theory and practice would be out of place. For the best final and complete success, each is necessary to the other. And yet in educational matters the separation between theory and practice often results in sharp contrast between the classroom worker and the bookmaking theorist. The opposing camps even fire their broadsides at each other. These antagonisms grow out of the extravagance, faultiness, and one-sidedness of theories, and from an unwillingness to work out the practical results of theory with patient endurance. Ever since Rousseau put forth his radical ideas of unrestricted freedom for children, noisy advocates of extravagant theories have not been lacking. For a time enthusiastic zeal for the natural sciences and nature-study prevailed, and then it dropped off, before satisfactory results had been achieved. Recently an equally strong sentiment for vocational studies has arisen, and is now at its height. The pendulum has swung back and forth too rapidly between extreme theories to allow time to work out permanent results. Practice should follow theory more closely with substantial results.

We may note several reasons why theories take on these extravagant forms: —

(1) It is easy to elaborate apparently good, or at least plausible, theories, while the ability to realize them in daily practice falls notoriously behind. It was an easy thing twenty years ago to introduce nature-study into the school and to defend it as a theory, but twenty years of experiment have not yet given us a

satisfactory course of study or method of procedure in nature-lore. This failure to execute theories lends a sort of hypocritical quality to much of our educational talk and discussion.

(2) The theorist is often satisfied with his theories. He deceives himself with the persuasion that he is doing the important brainwork, while the everyday teacher can look after the details. This is a case of self-deception. For the hardest part of any educational process is to make the theory work effectively in the classroom. A real thinker can devise more apparently good and plausible theories in a day than he can make effective in a month, or in a year. In other words, good class teaching is itself one of the finest of arts, and in no sense a mechanical process for inferior minds. The theorist is not occupied enough with the most difficult phase of his problem.

(3) The theorist has a way, too, of becoming enamored of his own thought creations, and of being inhospitable to those who differ from him in opinion. He is too strongly convinced of the truth of his one theory. He is like Pygmalion who made a beautiful statue and then fell in love with it.

(4) Again, educational theory has long been a rich field for quackery, and until clear and positive tests are developed and applied, these quackeries are hard to expose. Most educational tests are indecisive and uncertain. Shallow results are often showy and deceptive. Even sound thinkers are not safe in setting up theories unless they frequently resort to practical

tests to determine the soundness of their reasoning. The history of philosophy, that is, of really great thinkers and their systems of thought, reveals, over and over again, the proneness of the best reasoners to fall into error when they rely solely upon the mind's power to construct theories and fail to keep their thinking close to the corrective facts of experience.

(5) Again, theories have a way of taking on an extremely abstract form, as if the more abstract the better — the more incomprehensible, the wiser. It is an amiable weakness of students, when they have had a tincture of psychology and philosophy at the university, to imagine themselves to be philosophers. This presumption of wisdom usually shapes itself into a general theory so abstract that few people can understand it. A great deal of this kind of wisdom has been palmed off on teachers. Their minds have been wearied and confused by theories that might be good if one could understand and apply them.

(6) On account of a complete opening-up and progressive expansion of American education in recent years, with the introduction of many new studies and the neglect and criticism of the older curricula, there has been a prolific crop of new and more or less extravagant and conflicting theories. Psychology has been shifting its ground to a physiological basis, compelling a restatement of fundamental doctrines. Scientific experimentation in the laboratory for testing mental and physical reactions has delivered to us many new and valuable data. Study of children and of their

heredity has opened up broad fields of investigation. The modern industrial and social conditions of life have compelled a readjustment to new demands in society. As a result of these energetic forces, working in upon the school, education has been the football of conflicting theories.

During this period of turmoil the educational thinkers have luxuriated in thought creations. They have sat in their libraries with the memories of childhood about them, elaborating their doctrines as to how schools should be organized and courses of study planned. It is an entertaining and engrossing speculation to think out presumptively how these numerous millions of oncoming boys and girls are to be managed and instructed. As a result, we have been blessed with an annual harvest of general treatises on education. All this in the natural order is to be expected, and is a good thing. Such efforts to reorganize educational thought and to get a better grasp of our problem in its main aspects are necessary steps in the solution of many difficult technical educational problems. Theories we are obliged to have, both good and poor, and we shall learn somehow to discriminate between them.

If we had some way of compelling every projector of a theory to descend into the arena of practice and put his theory to the test in school and classroom, we should quickly eliminate weak theories, and we should soon get started right. The theorist himself would be brought to a better judgment. His ideas would take on a more practical and obvious usefulness which the

rank and file of teachers would begin to understand. Perhaps the wise man would begin to understand better his own theories in the light of experience.

In some cases the theorist has unintentionally stood far removed from schoolroom practice, undisturbed by the acute and baffling difficulties that beset real school-work and the practical reorganization of studies. This divorce between theory and practice is most clearly manifest in the failure to apply principles to the subject-matter of particular studies, the only place where theories of instruction can be applied. For example, it will be difficult to find anywhere a full and satisfactory treatment of how to teach long-division. It is very seldom that a writer on general theory has taken up the subject-matter of single important topics in a study like arithmetic and has shown in detail, and in full, concrete treatment of topics, how to organize the material and give it appropriate class treatment. It has been impossible to get single illustrations of such topics properly worked out as to plan and subject-matter. In the United States history, for example, but few important topics have been well organized and elaborated into their details for use in grammar grades. This actual working-out of theories upon knowledge material in coöperation with children brings a rude, rough-and-tumble contact with reality which disturbs the delicate sensibilities of a comfortable theorist. The selection and presentation of topics in our usual text-books is no adequate solution of this problem.

The disposition to shun this direct schoolroom work

with children and with concrete subject-matter is an intimation of professional weakness. Not only the writers of pedagogical books have ceased to teach real lessons to children, but superintendents, supervisors, professors of pedagogy, principals and directors of schools — the great body of what may be called educational leaders — do not find time to do this kind of fundamental work. Some of them have not taught a complete lesson with a class of live children for years. As a result we have a separation of the personnel of educators into two classes, the non-teachers and the teachers. On the one side are theorists who fail to show the application of their theories, and on the other, the actual teachers who do not understand the theorists, and are not guided rationally by fundamental ideas. The two classes do not sufficiently coöperate, and naturally fall into mutual criticism and opposition.

The actual teachers are much in need of rational theory to guide their practice. Teachers are not making the progress they should for lack of strong, controlling theory. The Committee of Eight in History, for example, worked out a superior course of study in history. They selected and arranged the central topics into a better series than had been offered before. But the illustration of topics given and outlined showed a course far too elaborate and extensive for children in the grades. Forty large topics in a single year furnish twice as much material as sixth or eighth grade children can work out with a proper treatment and understanding. These plan-makers had overshot the mark

and made too strong demands upon teachers and children. We are in great need to-day of expert thinkers and instructors who combine theory with practice, whose doctrines are constantly tested by daily application under necessary school conditions. In the new subjects like nature-study, manual arts, agriculture, domestic science, physical education, health and sanitation, we need a strong union of theoretical and practical knowledge together with skill in instruction. But all our studies, both old and new, are much in need of reorganization and simplification.

This very problem of the new grouping of knowledge materials around controlling centers of thought is the most difficult a schoolmaster can undertake. It is also the most neglected part, because it requires the theorist to deal at close quarters with a lot of details of subject-matter which he does not like to bother with. It demands thorough and intensive knowledge of the subjects and, at the same time, the use of sound principles of psychology and pedagogy as applied to the grouping and development of thought materials. It is surprising how little the pedagogical specialists are interested in this problem which involves the richer detailed knowledge of school studies. They toss it aside as a mere incident. In the old heroic days people tackled their problems where the chief difficulty lay. They did not shirk the main issue. We need now, if the present chasm between theory and practice is to be bridged over, a fresh supply of the old heroism of hard workers

who are not ashamed to deal with the raw materials of knowledge and to reorganize them.

When asked to help young teachers in their effort to work up important topics, the theorist gives a few general abstract maxims and furnishes a barren outline for the treatment of a topic. This is playing fast and loose with a serious problem. Outlines have had a great vogue, but such outlines are well-nigh worthless. Any one with a vague knowledge of a topic can make what to all appearance purports to be a good outline. I have seen dozens and scores of such outlines that are not worth the paper they are written on. They are, in fact, misleading — they make a pretense of solving a problem without attacking its real difficulties. They are not genuine organizations of thought material. A genuine outline is always based upon a rich body of well-digested knowledge arranged according to a few central, closely organized topics and developing strongly into an important truth. Such organizations are the product of long study and reflective sifting-out of rich thought materials.

The theorist may have done little or none of this kind of fundamental thinking, where he is constantly coerced by the nature of his thought materials and where his theoretical principles must conform to the concrete requirements of stubborn facts, both in children and subject-matter. He who will take the trouble to grub down into the root knowledge of studies, and will force his principles into close adjustment to these tough and refractory knowledge materials, will learn

the greatest lesson of all, how to yoke theory and practice together.

The history of education gives frequent demonstration of the folly of loose, careless theory unrelated to practice. The men who have produced profound effects in education have been thinkers and philosophers who did not shirk the hard work of schoolmastering. Comenius, Pestalozzi, Basedow, Thomas Arnold, Herbart, Horace Mann, and Francis Parker were genuine schoolmasters who rolled up their sleeves, as it were, and went to work in the schoolroom. Their life-work and struggle in the classroom are studied yet to find out how they wrought out and applied their principles to real stuff. They pioneered through actual difficulties.

On the other hand, even the greatest pure theorists, such as Plato in his *Republic*, Rousseau in his *Émile*, and Spencer in his *Education*, made surprising blunders, and half the time of the discussion of these authors must be spent in excusing their extravagances and false doctrines, while the other half is used in allowing due praise to their fruitful ideas.

Many of the recent books of theory are not sufficiently enriched with the results of practice. We need something more than compilations tossed together from a rapid survey of current books and doctrines. Education is a profoundly difficult and laborious subject to deal with, if the thinker will take the pains to subject all his theoretical ideas to the doubly difficult test of crude knowledge stuff and of the crude developing minds of children. To reduce these stubborn reali-

ties into a practical harmony is no holiday task. The mere book theorist has not grasped the significance of this phase of his problem. He is dabbling with his subject and is throwing the real burden back upon the shoulders of the classroom teacher, who, however, is not fully qualified to meet it.

What classroom teachers need to-day is strong theoretical and practical guidance from real leaders who are earnest and thoroughgoing enough to work out detailed problems of instruction. Our teachers have had an overdose of theory not well related to practice. It has been often observed that pedagogical literature with few exceptions is dull reading. One reason for this is the vague, abstract, and theoretical statement of principles. Many good teachers cannot think their way across the gap between vague theories and concrete schoolroom practice. Nor is this chiefly the fault of the average teacher, but rather of the average theorist who does not carry his thought far enough, or, more likely, lacks the experimental knowledge with studies and children to do so.

The first simple and fundamental test of a good schoolmaster, and also of a good theorist, is power to illustrate and concrete his ideas. This is sometimes lacking in the educational theorist, and it is a deeply unfortunate deficiency. Every teacher who reads the theorist's books and falls into his abstract way of thinking is in so far disqualified from becoming a good teacher. The blind leader and his follower thus fall together into the ditch.

From the point of view of the relation of theory and practice, our American education is not sufficiently practical. It leaves a wide gap between the two, and this gap is a foe to progress, and also a foe to present efficiency. Theory has an importance in the world just to the extent to which it governs practice; beyond that, nothing.

Every year we have thousands of young teachers who are asking to be guided from the land of theory into the land of practice. The passage across this borderland is the most difficult thing in education, and, to say the least, the leaders of American education are not skillful in inducting young people, by their own example, into skillful classroom work. The theorists themselves sometimes cannot apply their theories. They do not think it necessary in some cases to make the attempt. The two things which will qualify a person for genuine leadership in education are, first, a high degree of skill in classroom management and instruction, and, second, great ability and success in organizing the detailed concrete subject-matter of studies so as to have it in readiness for teaching purposes and in proper adjustment to children's needs. Without these two very difficult attainments the supposed leader in education is a figurehead and a pretense.

Schoolmastering is a fine art and the approach to it should be through scientific method. Scientific method itself should be the demonstration of the complete union between theory and practice. American teachers cannot be convinced of the real value of scien-

tific method, unless they see it based on sound theory and backed up by successful practice. We still believe in the rule of thumb, that is, in our ability to pick up right methods here and there in a haphazard way, without definite, systematic study of educational principles and practice. The German schoolmaster has more faith in scientific method. In preparation for the practice of a difficult art he is willing to spend years in the careful study of the history and scientific principles of his art and their application. Some of the most eminent teachers in Germany, at the head of great schools, are skillful classroom instructors. Teaching-skill in the classroom is the fundamental test of the schoolmaster's professional standing and efficiency. It is the one thing that he can do better than any one else. It is the thing he has a right to be proud of as a specialist. It is the thing that absorbs his most serious intellectual and moral efforts. It is his ambition to be a first-class schoolmaster, in power and efficiency, and not merely a figurehead at the head of his system. Dr. Otto Fricke, at one time head of the great Waisenhaus Schools at Halle, was one of the most eminent and scholarly schoolmasters in Germany. It was his frequent custom to teach a class of forty boys in the presence of his principals and subordinates, and then sit down with them at a round table to discuss freely his method of procedure.

Americans are supposed to be practical. At least, they usually pride themselves on this quality as a national trait. In educational matters this is not suffi-

ciently true. Many American leaders in education are not practical in the main issue. They are not attacking their problem in dead earnest at the central point of difficulty, namely, the bridging-over of the passage from theory to practice. It is not that they fail to theorize and to think out principles and systems of method, but they do fail to follow up the preliminary theorizing and planning with a positive campaign in the field of concrete studies. They turn over the most difficult part of the problem to the thousands of schoolroom teachers, half of whom are not well equipped for it. Even the better class of more experienced teachers are in distressing need of masterly leaders who can get into the ranks and show how to grapple with subject-matter in a lot of new studies, not yet well organized. The situation is pressing, and the demand for real, not titular, leaders is great. Here is a place where leaders are needed in the front ranks and not with the baggage-train.

Educational theories, as they have been elaborated from the minds of profound thinkers and tested by the conditions of life in and out of school, are of untold value, and profitable in the full, unrestricted sense. The landmarks of educational thought, as found in the writings of Plato and Quintilian, of Erasmus and Comenius, of Locke and Rousseau, of Herbart and Froebel, if appreciatively studied, enlarge one's educational horizon and give an inspiring idea of the scope and importance of education. Even the more recent numerous treatises on education are capable of pro-

ducing excellent results if we can only turn them into direct practical channels. But pedagogy, like theology, easily runs into a dry, formal dogmatism. Both have a strong tendency to develop an isolated self-sufficiency, which separates them from life interests and soon lays them on the shelf.

There is considerable danger of educational theory becoming a mere theoretical cult, even a pharisaical sort of self-righteousness, which not only stands apart from life realities, but is out of sympathy with the troubles and needs of the real toilers.

It is difficult to see how we can make much progress in reorganizing our course of study — the serious problem of our time — until a large number of educational thinkers are willing to grapple with subject-matter in studies at close quarters. Courses of study have been outlived by the hundred and we can go on making hundreds more without material improvement. The real problem lies lower down in the depths of the school studies, where mastery and organization of subject-matter are called for. Outside of a few experimental schools and among quiet, hard-working grade teachers, who do not know how to discourse on pedagogy, our present schematic plans of outlining courses of study are as formal as the old mediæval dialectic of the schoolmen. A close, practical union between educational principles and daily practice in classroom work is needed.

CHAPTER XII

THE CONTROVERSY AS TO SCHOLARSHIP AND A SCIENCE OF EDUCATION OR PEDAGOGY

The teacher who wishes to gain skill and efficiency in his work is met by two sets of advisers who are antagonistic. Each party is well assured of its views as correct. On one side are the advocates of scholarship, on the other side, of a science of education. Neither party, of course, would entirely ignore the claims of the other, but one party would give preponderance to scholarship, and the other to pedagogical science.

Complete and systematic knowledge is still regarded by many well-educated people, and especially by instructors in higher schools, as the one important need of a teacher. Any one who possesses sound scholarship, good sense, and some natural aptitude for dealing with children may quickly become a good teacher. A thorough, liberal education is the main thing. On this assumption the higher schools and colleges and universities are yearly turning out thousands of would-be teachers who have had little or no special training in psychology, pedagogy, or the history of education, to say nothing of experimental training in teaching.

It is hardly possible, in truth, to overestimate the value to a teacher of a comprehensive liberal education in history, in literature, in the sciences, in geography, in languages, in mathematics, in music, and

the fine arts. When broad culture is combined with sound scholarship and social cultivation, we have a highly superior equipment for the teacher. People of this persuasion feel that to substitute anything else for scholarship is a mere pretense. Pedagogy and psychology and child-study may be of some value, but they are in no sense the main consideration. The advocates of this view are a strong and influential body among educators, and they have, besides their own personal experience, a historical background upon which to strengthen their conviction.

Opposed to this view stands a second company of progressive educators who believe strongly in a science of education, in a group of simple, fundamental principles which control the processes of teaching and which must be understood by those who attain success in teaching. These principles have been organized into a system of procedure far more effective than the haphazard plans of one who has not studied education as a science. Psychology and child-study and the history of education have been worked over by philosophical thinkers into a body of educational doctrine which furnishes at least the safe beginnings of a science of education. All teachers will be strengthened in power and resource if they will spend some time in the careful study of these principles, and in learning, in practice schools under experienced critics, to apply them.

On the other hand, the advocates of scientific method claim that the most thorough scholarship is not a sufficient preparation for teaching. Many excellent schol-

ars have completely failed as teachers. Even a student of fine scholarship and of much natural aptitude for teaching will make many blunders and pass through a too long period of apprenticeship to teaching if he has not studied the scientific principles of education and has had no critical training in teaching. The practice of teaching, being very complicated in its processes, needs to be regulated by carefully devised plans. The waste of time by untrained teachers who presume to practice a difficult art without any preparation except scholarship is enormous. No good business could be conducted effectively on such a basis.

Presupposing a sound scholarship there are at least three lines of practical preparation which the oncoming teacher needs to reflect upon and to think out to a conclusion. First, are the natural mental processes explained in our scientific psychology. They are basal for all proper study and mental effort. Second, child-study which includes the stages of growth through which children pass, and the predominant impulses, interests, and characteristics shown by children in their development. One who ignores these qualities of human nature can spend several years in stupid blundering to the misfortune of all concerned. Third, is the special pedagogy of different school studies. Experienced teachers who have given their lives to the arduous and successful work of teaching find that each study has peculiar difficulties and modes of treatment, which experience has brought clearly into evidence. These need to be understood by the young teachers as a

means of efficiency and for the avoidance of a long train of errors and miscarriages. The history of education gives a fourth line of practical suggestion to teachers by setting forth in striking illustration the blunders and successes of individual educators in the past and the slow evolution of fundamental principles in teaching. It is a strong antidote to one-sidedness and opinionated doctrines in young students.

The advocates of a science of education as a practical basis for teaching are not opposed to scholarship, although they may seem at times to ignore scholarship, in their devotion to scientific theories and pedagogy. There has been some disposition to criticize and deprecate pedagogical studies as carried on in departments of education in the colleges and universities, and in normal schools, on the ground of neglect of scholarship. It is natural that some faults along this line should show themselves, but in such schools it will be found that three fourths of the time and often more are devoted to strictly scholarly pursuits, that is, to academic studies, and usually in a very thorough and disciplinary treatment of those studies. The great success that normal-school graduates have had in all parts of the country in collegiate and university studies is ample proof of this. The colleges and universities are pleased to get these products of normal-school training because of their studious habits and actual attainments. The supercilious criticism that has been directed against pedagogical training on this account is probably due to narrowness and lack of sympathy of the

critics. If the advocates of pedagogical training were disposed to return the sharpness of criticism, they might suggest that nowhere are improved methods of teaching more seriously demanded than among those teachers in higher schools who criticize pedagogical science. The amount of inefficient teaching in colleges and universities has been often acknowledged and bewailed by good authorities.

This controversy between the advocates of scholarship and of a science of teaching would not deserve attention but for the fact that most teachers have a strong leaning toward one side or the other. In reality good teaching involves both, and a full measure of each. The usual knowledge gained in higher and lower schools, considered merely from the standpoint of knowledge, is entirely inadequate to the needs of a good teacher. In preparation for teaching, every study ought to be gone over again more thoroughly, its materials better organized and mastered, and the concrete and illustrative phases extensively elaborated. Every teacher should have such a knowledge of his subject that he is the master rather than the slave of his text. Such masterly knowledge of school studies is unusual even in colleges and universities. Fortunately the critics are demanding a much higher scholarship than they themselves fulfill. The fault of our young college graduates who try to teach is that they are not masters of their subjects on the scholarship side. They are superficial. They do not come up to the mark which they themselves set. Notoriously the young gradu-

ates of colleges and universities entering upon high-school work are clumsy teachers. They lack sufficient scholarship for first-class teaching. After they have taught and illustrated the subject several times with children, they gain that thoroughness and richness of knowledge essential to a teacher.

But combined with this superior knowledge and directing its use in teaching, there should be a practical insight into the principles of teaching and an appreciative knowledge of children, of their temper and moods, and of their mental habits. It is only gradually that most teachers get a clear appreciation of the intellectual processes and impulsive feelings of children. It is not surprising that young teachers should plunge into these complicated problems of teaching without much plan or foresight. But experienced teachers should know better, and should realize that a preliminary instruction in the psychology of mental habit and child life, under an experienced teacher, would forewarn beginners against many blunders and point out the chief avenues of success. The greatest of all these difficulties is not scholarship alone, even of the best kind, nor is it the mastery of psychology alone, and of the doctrines of teaching based upon it, but rather the practical combination of fine scholarship with scientific insight. Skill in teaching and educating children is a fine art which combines these divergent elements into one product known as social expertness and tact. The application of school-acquired knowledge to the conditions of life is always an arduous problem. It is

no less so in the affairs of teaching. The mere acquisition of knowledge by a trained scholar is a relatively easy thing. The teacher, on the contrary, is working with immature minds which have not yet habituated themselves to the processes of learning, but are in the making, with all the tumult and resistance incident to getting the mind under control. The teacher is working at the very smelting process, the point of difficulty where new, uncomprehended knowledge meets this tumult of the child's mind. In every new lesson he has pioneering difficulties to meet. To guide twenty children of widely differing capacity so that they keep step, as they advance together through a new and difficult line of thought, is a bold undertaking.

There is, therefore, no real ground of controversy. The advocates of scholarship are not only justified in their demand, but it should be made stronger. They are right far beyond what they have claimed. Those who call for scientific principles in the educator and for skill in the application of these principles to children and to studies are making a very moderate and reasonable demand. They could insist more stringently upon thorough training in the principles and upon skill in the applied art. Thorough knowledge and its psychologic process are one. The teacher must somehow provide for both these things and then compass the still greater task of finding the harmonious unity of these two elements.

Herein lies true economy in educational processes.

In the common trades the application of scientific method has produced notable economies of very recent date. In education, it is difficult to get at such economies, because the processes are more complicated and elusive. It is probable, however, that the waste in uneconomical and bungling methods of teaching and school management is enormous. They show their hurtful effects later in business and in life-work of all kinds. In our school training of children, if we could apply scientific method to thorough and well-organized knowledge in all studies, we should form and strengthen those mental habits which contribute directly to efficiency in all the common occupations.

Poor teaching is more wasteful than poor work in industrial pursuits. It is not uncommon to hear the statement from experienced and discerning teachers that half the time in schoolrooms is wasted. But poor teaching is not only wasteful at the moment, it inculcates bad habits that will go on wasting for fifty years to come. A science of education, and an art of teaching based upon it, should get at this waste. The wide range of knowledge required for teaching, and the complexity and variety of activities which the teacher must guide successfully, make a powerful demand for an economic organization of his work; first, sound principles upon which to base his action, and second, economic and time-saving devices throughout all the details of his work. To teach one subject to one child

successfully is a rare achievement. To teach thirty children in eight or ten subjects, daily, at the same time directing wisely their social activities and moral tendencies, is a thing that requires every aid that previous experience and reflection can supply.

CHAPTER XIII

THREE PAIRS OF DUAL PRINCIPLES IN EDUCATION

I. CONSERVATIVES AND PROGRESSIVES

The opposition between conservatives and progressives shows itself in education as in politics. The conservatives naturally desire to hold fast the good features of the old education, the things which centuries of experience have shown to be valuable. Among those things which are supposed to have been approved by long experience may be named the following: the old classical tradition of the ancient languages; the doctrine of formal and mental discipline; the concept of distinct mental faculties such as memory, observation, reasoning; the notion of a perfect individual expressed in the phrase, "the harmonious evolution of all the human faculties"; the thorough mastery of the formal studies, reading, writing, spelling, arithmetic, and grammar; the strict notions of moral responsibility and obedience to authority; and finally the textbook method of assigning, learning, and reciting lessons. These are some of the good old doctrines and practices which conservatives hold fast, partly from habit and temperament, and partly because they have been tested and approved as satisfactory. These adherents of the old ideas and practices reject the new theories and methods as fads, as extravagances, or as untried fancies of enthusiasts:

reform movements in education they consider as one-sided and partisan. The reformers set up high expectations that are not realized in the event. They come far short of bringing the promised returns. The old standard methods in education are usually more successful than the new, because it takes a long time to get new methods into working order. Reforms in education are usually disappointing to all concerned. They come in waves of fashion and subside while the old fashions return. In the last twenty-five years we have had a rapid succession of reform movements, such as the kindergarten, natural science and nature-study, the elective system, physical geography, classical English literature, manual training, the Herbartian movement, child-study, and more recently, agriculture and vocational training. None of these propagandas have had any such success as their advocates at first expected. All of them have left permanent influences that have changed to some extent our ideas and practices in the schools.

The conservatives perform one very important service, — they keep up the continuity of our development, they hold us to our moorings so that we do not lose our connections with the past. Education must be deeply historical and traditional. Foremost of all, education must hand down traditional culture, the best ideas and spiritual treasures that a long historical past has accumulated and preserved. This traditional culture constitutes the main body of our courses of study. In this sense education, in its very nature, is conserv-

ative and preservative. It has immense faith in the past, and it discredits the brand-new enthusiasms of the present.

But in our day educational reformers have had their inning, and have introduced a whole series of radical changes. The last thirty years have seen, in the course of study and in modes of teaching, the most remarkable reforms that have been known in many generations. In all kinds of schools, high and low, important new studies have been introduced and the course of study reorganized. The reformers claim that these changes are a necessary adjustment to the great revolutions that have taken place in industrial and social life and in scientific progress generally. The reform movement, which began with Comenius three hundred years ago, has been gaining in power and influence through all the years, but its effects have reached a climax in our time that has almost upset some of the fundamental doctrines that have swayed education for centuries.

It is well to consider briefly what ideas have impelled the reformers to these radical changes. The feeling was very marked among progressive educators that our old classical course of study was too subservient to a long distant past and blind to the strong and powerfully developing needs of a new economic and social status, where the natural sciences, modern languages, the history and politics of the present, must control. Childhood itself in all its phases has been sympathetically, and to some degree scientifically, studied, so as to

bring the other half of the educational problem more clearly to our conscious recognition. The kindergarten, the child-study movement, the ideas of child freedom, and the gentler, more parental, treatment of children, the doctrines of interest and apperception, the juvenile court, the care of defectives, abnormal cases and health conditions, playgrounds and physical training, are clear symptoms of this greater regard for childhood.

The demand for social and industrial adjustment to life surroundings has been a marked feature of recent reforms. American history and civics, commercial and industrial geography, lessons in applied science, health, sanitation, etc., work in shops, gardens, and agriculture, commercial and business studies in the high school, domestic science and special vocational training, are unmistakable signs that people are demanding of the schools useful knowledge and practical skill.

At the same time there has been a decided revival of interest in modern literature and idealism, in fine art and music, in artistic design in the arts and crafts, in home and school decoration. The use of the old myths and stories of folklore, of tales of chivalry and modern classics, mixed with Greek and Norse legends, are signs that we have been searching among the treasures of all national literatures for the best educative thought-material that the fruitful imagination of poets and artists has produced. It is accordingly claimed by the reformers that there has been an astonishing enrichment of the real experience and vitalizing thought

needed to stimulate the mental and physical powers of children. The course of study has been lifted out of its old formalities, its dry and fruitless drills, its uninspiring routine. On the one side, the new course of study is intensely utilitarian, dealing with industries, with games and health exercises, with shops and kitchens, with farms and factories; on the other side, it is idealistic and fanciful, dealing with all possible poetical and imaginative ideas and situations. It is cultural, moral, and intellectual; but it is also physical, industrial, materialistic.

But these reforms have come on so rapidly and have run into and succeeded one another in such a bewildering chaos of contradictory demands, that nobody has been able to keep up practically with the theoretical advances. It has been as yet impossible to make even the good ideas involved in these sweeping reform movements strong realities in school and classroom. The problem is far more difficult than the mere outside observer can imagine. Actual educational reform moves very slowly. The progressives have introduced enough important reform movements, during the last thirty years, to keep us and our successors busy for the next hundred years in bringing them into full practical operation. The thing to do now is to take stock, survey the whole situation, sift out the leading ideas, organize all these forces into a working plan, and get industriously to work to realize upon our mixed accumulation of ideas and materials.

What attitude should we as teachers take toward

conservatives and progressives in education? Our present course of study is a pretty fair mixture or composite of these contending influences. Our methods of teaching and governing have also been changing and shifting under the pressure of these forces. The average teacher at present is upon a somewhat tempestuous sea, and must be driven hither and thither by the force of the waves. He needs to ballast his educational craft with sound doctrines derived from the reflective study of the important conservative and progressive thinkers. He must weigh out and test the relative values of more or less conflicting theories.

It is not safe to throw one's self unreservedly into the hands either of the reformers or conservatives. The inevitable result will be a compromise or readjustment between the two, and the best thing the teacher can do is to take in as well as possible the whole situation on both sides, and to find a balanced relation between conservative and progressive principles. On the one side it is foolish to assume that hundreds of years of earnest, laborious efforts by the ablest thinkers and schoolmasters have not resulted in the most valuable principles and practices in education. Men like Sturm, Ascham, Comenius, Pestalozzi, Herbart, and Arnold have not labored in vain.

On the other side, progressive theories of education which spring from fundamental changes in the organization of society, and from deep psychological and social research, are not to be ignored. It is the reflective study of both sides of educational movements, the

conservative and the progressive, that will put the teacher in position to face the problems of the present and to strike a well-balanced judgment in controversies.

Unless a large number of teachers among us become imbued with the best conservative and progressive principles, so as to hold them in balance, education will swing more or less violently from one extreme to another, and a steady evolution into better procedures in schools will be hindered. The characteristic of the teacher should be that large-mindedness which sees both sides of a problem and forestalls controversy. It does not mean feebleness of thought or lack of conviction.

In fact, conservatives stand as the protectors of a most valuable treasure of educational thought and experience. Progressives likewise are inspired with ideas of salutary reform and improvement in education. The real teacher should maintain an open and judicial mind for both sides and a strong enthusiasm for combining these merits into a larger whole.

II. SECULAR VERSUS MORAL EDUCATION

The conviction has been often expressed that our education is secular, on the one hand, and on the other, that it lacks the higher moral sanction. The complaint is periodically heard that public-school education has failed in improving the morals of the people; that there is, in spite of increasing intelligence, a serious lack of moral training; and that our whole system of education

needs to be reorganized on a sounder ethical basis. On this consideration there seems to be a practical contradiction between moral and secular education.

Now it will be admitted that moral training and moral character are necessary and fundamental in any system of education, and if this basal requirement is neglected, the whole structure is weak as to its most essential quality. There should be no weakness nor compromise in the demand for fundamental morality as the basal principle of all popular education.

Various proposals have been made toward strengthening the moral tone and moral influence of schools and teachers. Specific moral lessons have been advocated. The reading of the Bible in schools, a more definitely conscious moral use of biographies, of literary classics and of history topics having a rich moral content, an improvement in the moral standards of teachers, and an effort to use the social government and discipline of the schools as a means of teaching and enforcing moral obligations — all these and other special suggestions have been offered as means of moral uplift and reinforcement. In fact, there has been in the minds of teachers and of other people interested in education a separation between moral and intellectual training.

The disciplinary studies like algebra, geometry, and the languages have been chiefly regarded as mental drills, as whetstones to the intellect. The richer thought studies, such as geography, natural science, and history, have been thought of and treated chiefly as informational. The whole point of view and method of

teaching these subjects has emphasized this non-moral attitude.

On the other hand, we have thought of moral education as a separate thing, consisting of moral lectures, the learning of moral precepts, the study of the Bible; in short, the institution of some separate and specialized forms of moral training. The intellect and the moral sensibilities have been cut apart as if belonging to different realms. Thus an artificial contrariety has been established between the two forms of culture.

But human experience and knowledge are not by nature cut up into these opposed elements. The mind works as a whole, and not in fragments or in sections. We have no quarrel with the use of studies for mental discipline, but we do object to the degrading of great moral studies like literature, history, and social science to mere hack-work in mental drill. When we learn to treat these great studies with an eye single to their fundamental ideas, that is, to get at their real content and meaning, we shall have no just complaint that moral education is neglected on that side. Our narrow and one-sided use of studies is responsible for this result. Let us observe that the secular character of our studies is, in no proper sense, opposed to moral culture, or even responsible for moral deficiencies in education.

Our whole course of study is rapidly becoming fundamentally racial and social, i.e., moral. When we say that the underlying purpose of education is to socialize as well as to individualize the child, we are but expressing in a different way the controlling moral pur-

pose of the school. No single study or group of studies can give a child his proper moral bent and training, because all education in every study and in every phase of discipline is moral. To be of real value all studies are focused upon the moral aim, or, better, are inherently involved in the moral movement. Moral education is too important to be delegated to any one study or one set of influences. It must permeate the whole; it must be omnipresent; it must dominate all phases of instruction and of school management. This is no mere verbal sentiment.

Slowly the higher values are gaining recognition in education, and the highest values are moral. The modern enrichment of the course of study in history and biography, in commercial and economic geography, in literature and reading, in the social and practical uses of science, in social games and amusements, and in the industrial arts, all have a distinctive moral emphasis as dealing with the social and moral needs in the organization of society.

We have been too much inclined to think that morals must be taught as a separate subject like arithmetic or grammar. But morality should spring out of all subjects and out of all the social life and conduct of the school. Important ideas are rapidly becoming the organizing centers of school studies. They are but few in number and possess far-reaching organizing influence. Foremost among these, and deeply embedded in history, literature, and social science and school discipline, are the moral ideals of our race and of present

society. What we need to do is to keep clearly in mind the essential purpose of the school to develop sound character, and then handle all school subjects in that natural relation to life and its duties which springs directly from the nature of these studies and their bearing on life problems. Morality thus is genuine and essential and universal.

In this respect all secular studies become moral in tone and purpose, because they are the embodiment of moral life principles in the essential organization of studies as related to men's lives and enterprises in society.

There are, indeed, some studies, like history, literature, and economics, and economic geography, which are so full of human life and interest that the moral elements are conspicuous, while other studies, like mathematics and science in their purely academic treatment, are non-moral, but in their relation to the aim of education and social values they become vitally related to human welfare.

III. GENERAL TRAINING AND VOCATION

Another contrast that appears in our educational theory and discussion is that between general and special training, between what we call a broad, liberal culture on the one side, and special or vocational training on the other.

It has been a strong feeling of the schoolmaster that the studies and discipline of the common school are selected and designed so as to give all children that

liberal equipment of knowledge and those habits of work and conduct which will broadly fit them for any station in life. For the general purposes of living and for easy adjustment to the social order, every child needs history, science, geography, literature, music, mathematics, the arts, and proper behavior. A long period of schooling is required, from six to fourteen, and, in some cases, much longer, to give a child this varied equipment for life problems and duties. As society grows more complex in its structure and more varied in its demands upon the individual, it requires a still longer time to secure these common and universal accomplishments. The widening-out of the course of study in several new directions is the expression of these expanding demands that the world is making upon young people as they leave the school.

Business men, on the other side, and those who like to be called practical educators, have always claimed that school studies should prepare more directly for business life, and have even gone so far as to say that the grammar school should prepare for vocational pursuits, that is, should cultivate specialized skill in certain trades and industries. Just at the present time this demand is very strong and is gaining much popular acclaim and support. This brings on a certain conflict between those who favor a broad general education, common to all, without regard to future calling, and those who advocate special vocational training.

It may be said, without much fear of contradiction, that both these contrasted forms of training are neces-

sary for every human being who fills his proper place as an adult in society. He must be educated up to the point where he can respond intelligently and promptly to all the general requirements of a citizen in the manifold relations to society at large. He must also become an expert in some vocational line of work, where a high degree of skill and proficiency is demanded. There can be no doubt as to the necessity for this double educational proficiency in each person. It is also true that, if both these results are to be attained in the common school, the field of its important activities must be greatly enlarged; for the general studies of the school, already incorporated into the course, are more extensive than we can master under present conditions in the time given.

Vocational training, again, must be judged according to its proper relation to children. It may be said that in all probability no child before the age of fourteen is qualified physically and mentally to take on the technical skill required by adults in a vocation. His physical abilities are not equal to that kind of skill without a forcing of the process upon those who are immature. The beginnings of vocational training in skilled trades in all nations are not usually made before the age of fifteen or sixteen.

A study of the children's physical limitations and undeveloped physical powers will help to settle this question right. Until the children are mature enough to take on this high degree of technical skill required in the trades, we can afford to let special vocational

training alone. Two good reasons, therefore, can be assigned for not introducing vocational training below the high school: first, children are too immature in their physical and mental powers; second, this period, for the welfare both of the child and of society, should be devoted to the purposes of general education, preliminary to specialization in trades. It is now generally conceded that the high-school period from fourteen to eighteen, and even till twenty, is the appropriate time for mastering skilled vocations. The training for the higher professions in the universities comes later still. Our whole school system needs greatly to be strengthened at this high-school period. Trade schools, commercial departments in high schools, and continuation schools should be made numerous and strong in all our communities to meet this need. The present agitation in favor of vocational schools for young people between the ages of sixteen and twenty, is entirely justified.

It may also be said that manual training or industrial arts in intermediate and grammar grades should give introductory courses in woodwork, textiles, printing and bookbinding, and clay-modeling, which will furnish the children with suitable exercises in working with tools and materials. These school arts will cultivate the constructive powers and aptitudes in children without overstrain, and gradually develop them from crude and imperfect efforts to some degree of skill in designing and making a considerable variety of objects. The training and skill thus acquired will be profitable

as a preparation for skilled trades when the time comes, and will also give all children an exercise and aptitude for working in various materials that will be useful to every person in the future.

There seems, therefore, to be a reasonable and practical solution of this conflict between general and vocational training. Both are important, and the transition from general education to vocation must be adjusted to the powers of children and to the needs of society in its permanent interests. It is an adjustment, however, which takes place mainly in the high-school period. The industrial arts in the elementary and grammar schools are primarily an essential part of that general training which fits for citizenship and only incidentally a preliminary to the training for vocational employments.

Teachers must take a broad, longitudinal survey of the whole course of school training to get a full perspective of this problem. What seems to many practical people a discord between vocational studies (those preparing directly for a calling) and our present common-school course is at bottom no discord at all. The better trained children are in arithmetic, history, and reading the quicker they will master their later vocational studies, and the larger their opportunity throughout life.

The present movement toward vocational training is more than justified by the fact that thousands of young persons between the ages of fourteen and twenty are not now provided with school opportunities for

learning a trade or any kind of specialized skill in a life-calling. Many young people in their teens are idle a good share of the time, or they shift about from one thing to another without becoming expert and reliable in any one pursuit. At the age of twenty they are not much better qualified for a lifework than they were at fifteen, and in addition they may have fallen into bad habits.

Our high schools supply extended secondary training, including commercial and domestic-science courses, but these fail to meet the needs of large numbers of young people who must be earning a living and at the same time are preparing for a permanent livelihood. We are in great need of a well-organized, fully equipped system of secondary schools for boys and girls between fourteen and twenty that will train these young people into efficiency and skill in a great variety of common callings; not merely in the long established trades, such as tailoring, bricklaying, etc., but in butchering, in baking, in barbering, in shopkeeping, in laundering, in gardening, and in a hundred other callings.

Our industrial society has reached the point where it feels sharply the need for trained and skillful workmen in all these common pursuits. Otherwise there is enormous waste in every line of service and production. The young people, also, for their own success and happiness in life, should become expert workmen or producers in some permanent calling by the time they are twenty years of age. Upon the vocational schools must

rest the responsibility for this training in a great variety of callings.

Even in vocational schools it has been customary to carry along some lines of general-culture study parallel with vocational work, such as English, history, economics, composition, and arithmetic. Our high schools furnish some courses which are largely industrial and vocational and at the same time other courses which are academic and broadly cultural. All along the line, from the end of the grammar course on, students are found passing over from general-culture courses into special or vocational courses. There is, therefore, no exact line of separation, at present, between general and vocational courses of study. There is, however, no basal conflict between cultural and vocational studies. Every child should have a full share of each, as much as his circumstances and abilities will permit.

CHAPTER XIV

CONCLUSIONS

In the discussions of the preceding chapters we have found dualisms which tend to grow into practical contradictions in the chief phases of educational effort. The basis for these contradictions lies in human nature; that is, in the conflicting forces found in child and adult, and in society as organized. The necessary subjects of study themselves show also the elements out of which conflicts spring.

In nearly every one of these problems we have observed a marked tendency of teachers to fall into dispute and controversy and to break up into opposing parties. This tendency toward partisanship and conflict is also a marked feature of educational history extending through centuries. Men have wrangled over these dualisms throughout long periods, and the persistence with which these controversies have been carried on is proof of their fundamental difficulty and real dual character.

The discussion of the conflicts or oppositions given in the preceding chapters seems to indicate that, in nearly every case, there is no cause for lasting controversy or contradiction. At least, there is no irreconcilable conflict. The principles involved in each case are complementary, not antagonistic. A more complete and fair-minded study of each problem, on both

sides, reveals a larger unity which incorporates both views.

If our interpretation of these problems is approximately true, it throws much light upon the teacher's perplexities and shows a method for solving them. The most difficult problems of instruction and of school management seem to center in these dualisms. If we can find a way to interpret them wisely and to reconcile them, we shall get the teacher started right and save him endless waste and conflict.

The attitude of the teacher toward these dualistic problems will show his narrowness or his breadth and balance, and determine his qualification for educational responsibility. On this basis the qualities of a superior teacher may be stated as follows: —

1. Large-mindedness in comprehending adequately both sides of a dual problem. This is more than mere tolerance, more than a mere spirit of compromise. It implies industrious and patient study, the clear, intelligent survey of an entire situation on both sides as to its facts and principles.

2. Judicial-mindedness in measuring values and in finding the proper balance and harmony between opposing tendencies. Patience and suspended judgment are often needed in measuring up and balancing accounts in a complex situation.

3. Open-mindedness and lack of prejudice, where one is naturally inclined to take sides in a controversy, also self-restraint and self-control are required.

4. In the schoolroom where principles are put in

practice, the teacher must show marked versatility and quickness in shifting from one point of view to the other, in springing back and forth between extremes. This rapid movement of the mind back and forth is often the means of adjustment and harmony between opposites. This flexibility of temper is a quality not easily attained, because it is more easy and natural to dwell in one sphere of thought or feeling and to neglect or ignore its complementary mental state. Diplomatic shiftiness may express this quality in a practical way.

We may sum the matter up in this way: The marked traits of the teacher should be breadth and variety of usable experience, an open and receptive mind for all phases of human thought and feeling, and an interest in all kinds of knowledge. The teacher in the common school specializes in universal qualities, and not in any particular kind of knowledge. The dualisms which we have discussed lie in the field of human experience common to all. They express universal tendencies in human nature and in society. The common school is expected to give the training which fits for this common life of all. In adjusting himself to his surroundings in home and society, in work and play, the child will meet all these contradictions. They are a part of the social order in which he lives. The teacher, who should be sufficiently broad-minded and diplomatic to harmonize these opposing tendencies in education, would be the greatest peacemaker in the world. The peacemaker is the one who prevents needless conflict, who encourages the spirit of friendliness, and brings people

to the superior standpoint, where they can appreciate the larger union and harmony of rival or conflicting forces. If the teacher, by his greater breadth and tact, can get the stronger and better forces of society to work together, he can present a much bolder front to the evils in society.

The above-mentioned qualities in the teacher may not be easy of attainment. There is, however, opportunity for their exercise every day and hour in schoolrooms. They represent the higher phase of those universal necessities for which the school stands.

The dualisms which we have described and for which we have attempted to suggest a solution are found to underlie our basal problems in school government, in all phases of class instruction, in the general theories of psychology and pedagogy, in the subject-matter of school studies, in child nature itself, and in the social and political organization of society. The history of education is a series of object lessons in the controversies which have sprung out of these dualisms.

A science of education should balance up and combine these opposing tendencies, removing all unnecessary causes of friction, and should make plain to teachers the points where they ought to broaden and deepen their knowledge of principles, so as to grasp the larger unity of educational doctrine.

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